



Routledge Studies in Contemporary Philosophy

REVISING FICTION, FACT, AND FAITH

A PHILOSOPHICAL ACCOUNT

Nathaniel Goldberg and Chris Gavalier



Revising Fiction, Fact, and Faith

This book addresses how our revisionary practices account for relations between texts and how they are read. It offers an overarching philosophy of revision concerning works of fiction, fact, and faith, revealing unexpected insights about the philosophy of language, the metaphysics of fact and fiction, and the history and philosophy of science and religion.

Using the novels of J.R.R. Tolkien as exemplars, the authors introduce a fundamental distinction between the purely physical and the linguistic aspects of texts. They then demonstrate how two competing theories of reference—descriptivism and referentialism—are instead constitutive of a single semantic account needed to explain all kinds of revision. The authors also propose their own metaphysical foundations of fiction and fact. The next part of the book brings the authors' philosophy of revision into dialogue with Thomas Kuhn's famous analysis of factual, and specifically scientific, change. It also discusses a complex episode in the history of paleontology, demonstrating how scientific and popular texts can diverge over time. Finally, the authors expand their philosophy of revision to religious texts, arguing that, rather than being distinct, such texts are always read as other kinds, that faith tends to be more important as evidence for religious texts than for others, and that the latter explains why religious communities tend to have remarkable historical longevity.

Revising Fiction, Fact, and Faith offers a unique and comprehensive account of the philosophy of revision. It will be of interest to a wide range of scholars and advanced students working in philosophy of language, metaphysics, philosophy of literature, literary theory and criticism, and history and philosophy of science and religion.

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and Chris Gavalier

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To our families (old and new, lost and found)



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Note on the Text and Acknowledgments

Because (as explained shortly) the history of discourses and their diegetic revision are central to our concerns, we cite discourses by their initial year of publication and by the year of publication of the edition cited if different.

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Introduction

Novelists change old characters by restarting their stories and reinterpret old stories by revealing new things about them. Journalists correct mistakes in earlier articles, while science writers update textbooks after the latest discoveries. Religious communities follow scriptures that sometimes reinterpret and other times continue previous views of the divine.

These are revisions of written texts concerning fiction, fact, and faith, respectively. Such revisions are ubiquitous. Philosophers however have tended to focus on revision not of written texts directly but rather of the meanings and theories that those texts express. Even then they have usually focused on factual texts. We provide a philosophical account of revision of written texts both directly and generally.¹ Filling that conceptual gap produces unexpected insights into the philosophy of language, the metaphysics of fact and fiction, and the history and philosophy of science and religion.

Revising Fiction, Fact, and Faith: A Philosophical Account engages in descriptive metaphysics in something like Peter Strawson's (1959/2005) sense. The engagement is loose however because, rather than being "content to describe the actual structure of our thought about the world" (9), as Strawson was, we are content to describe merely that part of the world involving fiction, fact, and faith, and their revision. Rather than "laying bare the most general features of our conceptual scheme," moreover, we lay bare only certain features of textual kinds and our revisionary practices. Even then, unlike Strawson, we do not hew as closely to ordinary-language analysis. Nonetheless, like Strawson, we aim to describe rather than to challenge. We are not skeptical about the existence of those kinds or practices.

In describing them, *Revising Fiction, Fact, and Faith* also engages in conceptual analysis. The engagement however is again loose because, rather than always providing necessary and sufficient conditions of concept application, we agree on this issue with Kathleen Stock that there are also other desirable sorts of theories:

Let's call the sort of theory we're looking for an 'explanatory theory' rather than one of straightforward conceptual analysis. . . . The mark

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of a good explanatory theory . . . is that it should explain something we care about. . . . [E]xplanatory value might include: accounting for relations between entities in a way which solves existing puzzles about them; complementing and providing elucidation of existing theoretical commitments in related areas; or showing the point of some aspect(s) of our current practice. . . . [T]he theory should also aim to display traditional theoretical virtues: for instance, to cover a wide range of interesting cases, though not so wide as to obscure important-looking distinctions where they emerge.

(2017, 6)²

While much of what we do is conceptual analysis, we aim to explain fiction, fact, and faith, and their revision by accounting for relations between texts, how they are read, and their kinds—which collectively solves existing puzzles about them. We sometimes do so by complementing and providing elucidation of existing theoretical commitments in the philosophy of language, metaphysics, and the history and philosophy of science and religion—and always by showing the point of many aspects of our current practice. And we hope to cover a wide range of interesting cases while cognizant of Stock’s caveat.

Finally, in aiming to offer a good explanatory theory, the argumentative structure of *Revising Fiction, Fact, and Faith* is holistic. In philosophy, some arguments are atomic, isolated from one another. Others are molecular, combining with particular peers. Ours are holistic, combining with many or most arguments presented in our text. While we explicitly marshal support for each argument in the chapter in which it is introduced, we also do so implicitly in other chapters as our philosophical account of revision builds. The holism is itself however loose because, rather than the acceptance of one argument’s requiring the acceptance of all, considerations in favor of one are often merely considerations in favor of others.

The phenomena of revision that we analyze are perhaps most recognizable in literary and popular culture. Though not new, their prevalence is relatively recent. Film culture is especially rife, and we might draw from any of a wide range of franchises. All series have installments that follow one another, and many of the sequential *Halloweens*, *Missions Impossible*, and *Rockies* continue (albeit often loosely) adventures in the same fictional worlds without either restarting or revealing new things about earlier installments. *Star Wars* also provides multiple examples of installments occurring later (*Episodes VII–IX*) and earlier (*Episodes I–III*) than the initial series of stories (*Episodes IV–VI*). Yet later installments of that initial series also reveal new things about its own earlier installments (the status of Luke’s father, Darth Vader, in *Episode V*, and his sister, Leia, in *Episode VI*). Marvel movie franchises include later stories that restart earlier ones about Spider-Man. *Spider-Man: Homecoming* (2017)

restarts *The Amazing Spider-Man* (2012), which restarts *Spider-Man* (2002), which may itself be considered a restart of the comic book series *Amazing Spider-Man* (begun 1962). Moreover sometimes some prefer an earlier installment to a later one. *Star Wars* fans are especially (in)famous for this.

Comics publishers Marvel and DC themselves present an overwhelming number of examples of revision. Frequently later stories pick up earlier plots without changing them. They do not do so always. As we explained elsewhere (Gavaler and Goldberg 2019, 110–11), the first comics example of a later story revealing something new about an earlier one occurs when *Action Comics* #13 (June 1939) reveals that newly introduced Ultra-Humanite was behind crimes detailed in *Action Comics* #2 (July 1938). The first example of a later story restarting an earlier one occurs when *Showcase* #4 (October 1959) restarts the story of Flash, detailed in *Flash Comics* #1 (1946) and continued through *All Star Comics* (1951). The prevalence of revelations and restarts, rather than mere continuations, in comics is likely due to their multi-author nature. Characters are intellectual property owned by corporations, which in turn employ a constantly changing roster of writers collectively revising serially published fiction.

Yet literary fiction by single authors exhibits the same revisionary phenomena too. The majority of Louise Erdrich's novels either continue or reveal new things about her first novel, *Love Medicine* (1984), and 15 of William Faulkner's novels are set in his fictional Mississippi Yoknapatawpha County introduced in *Sartoris* (1929) and so continue its story. Because Harper Lee's first written manuscript, *Go Set A Watchman* (2015), has similar but distinct individuals, objects, and events from her more famous and first published manuscript, *To Kill a Mockingbird* (1960), *Go Set a Watchman* restarts *To Kill a Mockingbird*'s story, though had the publication order been reversed then the reverse would be so. In Lee's case, a majority of readers likely accept the earlier published work, rejecting the later one as non-canonical. The variant manuscripts of *Hamlet* are themselves alternating restarts and rejections of restarts of the same story, and the relationships among the plays of Aeschylus, Euripides, and Sophocles involve an especially complex combination of all the kinds of revision that we analyze. Add the vast online platforms for fan fiction about all such movies, comics, novels, plays, and more, and the application grows exponentially.

The field of textual scholarship—including bibliology (studying the history of books as physical objects), paleography (dating historical manuscripts through handwriting analysis), and textual criticism (studying variants of manuscripts, such as *Hamlet*)—opens the range of possible application even further. Our goal however is not to overview its application, including within just literary studies. Though our philosophical account of revision is inspired by and applies to numerous narrative

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texts, it is not limited to them and its application beyond them is at least as significant. While our study should be of interest to literary critics and theorists, popular-culture scholars, and narratologists generally, it is not a work of literary theory or criticism. It instead generalizes insights from fiction to reveal unexpected insights into the philosophy of language, the metaphysics of fact and fiction, and the history and philosophy of science and religion. Moreover we limit our analysis of fiction to a single set of texts by a single author. Because his fictional texts encompass various kinds of revision, we begin with *The Hobbit* and *The Lord of the Rings* by John Ronald Reuel (“J.R.R.”) Tolkien.

Chapter 1, “There and Back Again,” distinguishes the purely physical aspects of texts, the linguistic aspects of texts, and the worlds to which the latter refer. It then turns to *The Hobbit* and *The Lord of the Rings* to establish that sometimes new texts are read as replacing old ones, as revealing something new and seemingly contradictory about old ones, and as continuing old ones. Further, sometimes others reject such revisionary readings. The chapter isolates, identifies, and analyzes each of these revisionary kinds as well as their rejection, using Tolkien’s texts as exemplars.

Chapter 2, “Semantic Dualism,” demonstrates that two different theories of the reference and meaning of proper names, descriptivism (the common core of Friedrich Ludwig Gottlob Frege’s, Bertrand Russell’s, and their followers’ views) and referentialism (the common core of John Stuart Mill’s, Saul Kripke’s, Hilary Putnam’s, and their followers’ views), explain each of the revisionary kinds and rejection just considered. Neither however explains them all. The chapter then argues that the two theories previously construed as competitors are instead complementary components of a single semantic account. We call that account ‘semantic dualism’.

Chapter 3, “Metaphysical Foundations of Fiction and Fact,” likewise relies on two analyses of fiction previously construed as competitors, David Lewis’s and Kripke’s, to propose our own metaphysical foundations of fiction and fact out of their complementary components. It then compares those foundations to others.

Chapter 4, “Reporting, Applying, Bracketing,” expands our metaphysical foundations by canvassing case studies concerning fictional and factual planetary objects, thereby making forays into the history and philosophy of astronomy. It does so to distinguish reporting of fact, applying of fiction, and bracketing of texts as fact or fiction.

Chapter 5, “Considering Kuhn,” demonstrates that our philosophical account of the revision of fictional texts of fantasy literature applies equally to the factual texts of scientific disciplines. It does so by bringing that account into dialogue with Thomas Kuhn’s famous analysis of factual, and specifically scientific, change. Considering how the history of astronomy and dynamics converge, the chapter then diagnoses where

Kuhn and his critics disagree and uncovers distinctions that they missed. The chapter closes by further distinguishing fiction from fact by analyzing restrictions on kinds of revision.

Chapter 6, “Being Brontosaurus,” analyzes a complex episode in the history of paleontology. Besides showing a further application of our philosophical account of revision, the chapter also demonstrates how scientific and popular texts can diverge. And it provides a general analysis of illustrations.

Chapter 7, “Analyzing Abraham,” expands our account to religious texts. The chapter argues that, rather than being distinct, such texts are always also read as other kinds, that faith tends to be more important as evidence for religious texts than for others, and that the latter explains why religious communities tend to have remarkable historical longevity. The chapter then applies our total analysis to compelling episodes in the history of the Abrahamic faiths of Judaism, Christianity, and Islam.

Finally, the Conclusion catalogs overall lessons that *Revising Fiction, Fact, and Faith* reveals. These concern revisionary kinds and their rejection; reference and meaning; metaphysical foundations of fiction and fact; planetary objects, dinosaurs, and religions; and fiction, fact, and faith, and their revision. The chapter closes with the metaphilosophical lesson that one way of studying fiction, fact, and faith is studying the history of how their corresponding texts have been revised, offering a philosophical account of revision.

Notes

1. Because we are ultimately concerned with analyzing the history of textual revision, we are calling for a philosophy of the (external) history of (internal) history as detailed in texts—loosely, the philosophy of the history of history. Gregorio Piaia and Giovanni Santinello have edited three (1993; 2010; 2015) of five projected books on what they call “models of the history of philosophy.” They are interested in the (external) history of how (internal) history of philosophy has been analyzed—loosely, the history of the history of philosophy. Jorge J.E. Gracia (1992) has explored “philosophical historiography,” or how the history of philosophy has itself been used philosophically—loosely, the philosophy of the history of philosophy. And one of us (Goldberg 2017) has engaged in the philosophy of the history of philosophy when arguing that one philosophical use to which the history of philosophy could be put is in conceptual cartography.
2. Strawson himself casts doubt on the utility of offering necessary and sufficient conditions (1959/2005, 11).

1 There and Back Again

We focus on three of Tolkien's fictional texts as case studies of how new texts can be read as revising old ones. The first text is the 1937 edition of *The Hobbit; or, There and Back Again*. The second is the novel's second edition, published in 1951. And the third is *The Lord of the Rings*, a trilogy consisting of *The Fellowship of the Ring*, published in 1954, and *The Two Towers* and *The Return of the King*, published in 1955. Studying these cases permits isolating, identifying, and analyzing distinct kinds of revision, as well as their rejection. That begins our philosophical account of revision as it pertains to fiction. In later chapters we recur to Tolkien as we expand it to fact and faith. First however we introduce our notions of discourse, diegesis, and world.

Discourse

Philosophers distinguish syntactic properties of linguistic objects, including grammatical category and form, from semantic properties, including reference and meaning. We draw a further, more fundamental distinction. There are the purely physical properties of linguistic objects. These include such things as shape, size, and position, whether of graphemes, phonemes, or other kinds of objects from other media. Then there are the linguistic properties of linguistic objects. Those include both syntactic and semantic properties, though we focus on the latter.¹

While each of these has other meanings, call a completed prose text understood in terms of its purely physical properties a 'discourse'.² Discourses are complex physical objects. The 1937 and 1951 editions of *The Hobbit* are distinct discourses. Discourses also have parts, which are simpler physical objects. These include chapters, sentences, and words understood in terms of their purely physical properties, prototypically ink on paper or pixels on screen. Discourses may themselves be part of more complex physical objects. *The Lord of the Rings* was initially published as three separate texts and in that sense is composed of three discourses. It has been published as a single text too. Unless specified otherwise, we treat *The Lord of the Rings* as a single discourse.

Consider the discourse that is the 1937 edition of *The Hobbit*. One of the discourse's parts is 'Bilbo'. "Bilbo" (which mentions the mentioned object) names either a type or a token of an object. On the one hand, if "Bilbo" names a type, then 'Bilbo' is a single abstract object with multiple concrete tokens on this page. The type is abstract because in identifying it we abstract, or draw away, differences across different tokens. Its tokens are concrete because in identifying them we observe their solid mass, or concreteness.³ On the other hand, if "Bilbo" names a token, then 'Bilbo' is one of many concrete occurrences of the token on this page. Put differently, if "Bilbo" names a type, then 'Bilbo is Bilbo' contains only two words, 'Bilbo' and 'is'. If "Bilbo" names a token, then 'Bilbo is Bilbo' contains three, 'Bilbo', 'is', and 'Bilbo'.⁴

We generally regard discourses and their parts understood in terms of their purely physical properties as types. This may be intuitive for simpler objects, such as 'Bilbo', but less so for more complex objects, such as the 1937 edition of *The Hobbit*. When Tolkien published that edition, however, he did not publish a particular token. His rights as author did not pertain to that one concrete object or to other occurrences of it qua concrete. His rights pertained to that one concrete object because it pertained to its abstract type. Further, though we are understanding each as types of visual objects, they can also be understood as types of auditory objects or objects in other media. Tolkien's rights still hold.

Even limiting ourselves to visual objects, different tokens of 'Bilbo' and the 1937 edition of *The Hobbit* can differ in such things as shape, size, and position. We take different objects to be tokens of the same relevant type if and only if they have the same exemplified properties in Philip Pettit's (2002) sense. As one of us discussed elsewhere (Goldberg 2015, 59–63), according to Pettit, while any finite set of examples instantiates an infinite number of properties, humans have a "ground-level disposition or habit . . . to extrapolate spontaneously in a given direction, taking the examples to be instances of a kind" (142). Though any such set of examples *instantiates* an infinite number, humans take it to *exemplify* a finite number based on what we find salient. Unlike instantiation, exemplification is relative to our interests and abilities.

Diegesis

If a discourse is a completed prose text, then call the linguistic object constituted when a discourse is read a 'diegesis'. 'Diegesis' is Plato's word in the *Republic* (392c–398b) for story.⁵ Diegeses are complex linguistic objects.⁶ The 1937 and 1951 editions of *The Hobbit* when read are constitutive of distinct diegeses. Diegeses too have parts, which are simpler linguistic objects. Those include chapters, sentences, and words understood in terms of their linguistic properties. Discourses also may be part of more complex linguistic objects. Just as we have reason to treat *The*

8 *There and Back Again*

Lord of the Rings, though initially published as three separate texts, as a single discourse, we have reason to read it as constitutive of a single diegesis.⁷ How and why does reading a discourse constitute a diegesis?

Mark Johnston (1989) coined the term ‘response-dependence’ to generalize John Locke’s notion of a secondary quality, such as color (1689/1979, II.8).⁸ According to Locke, an object is red if and only if normal human beings under normal conditions of observation would perceive the object as such. The object and responses to it are jointly constitutive of its redness. Locke contrasted secondary qualities with primary ones, such as solidity. An object is solid if and only if it has whatever physical (Locke’s “corpuscular”) kind of configuration that makes something solid. The object is individually constitutive of its solidity. Details of various response-dependence theories differ, and Locke’s own view can be taken only so far. Nonetheless, as we understand them, being a discourse is akin to being a primary quality. Its constitution does not involve any relation to any responses. Being a diegesis is akin to being a secondary quality. Its constitution does.

Yet responses relevant for color are not necessarily relevant for diegeses. Elsewhere one of us (Goldberg 2015, chapters 7–8) articulated and defended a response-dependence account of meaning. For any object, the object has a meaning if and only if a suitable subject under suitable conditions would respond to it as having that meaning. The object and responses to it are jointly constitutive of its meaning. Here we build on that with a response-dependence account of diegeses. For any discourse, the discourse has a meaning, and so is a diegesis, if and only if a suitable subject under suitable conditions would respond to it as having that meaning. Because such a subject would be a reader, any discourse is a diegesis if and only if it is read as such. The discourse and reading it are jointly constitutive of its being a diegesis. We may say that a discourse is “read as” a diegesis.

Thus linguistic properties are distinct from purely physical ones not because they have no physical component but because they are relational. Because this understanding of how discourses and diegeses relate is central to everything that follows, consider six further points.

First, our response-dependence account of diegeses also applies to their parts. Just as the 1937 edition of *The Hobbit* discourse is read as the corresponding diegesis, ‘Bilbo’ the purely physical object is read as the corresponding word.

Second, just as we generally regard discourses and their parts as types, we generally regard diegeses and their parts as types.

Third, because discourses are completed prose texts, they are human creations. Because diegeses are constituted, and we might add only constituted, by discourses when read, diegeses exist only in virtue of such creations.

Fourth, because discourse completion especially when followed by publication can be dated, we may say that some discourses occur “earlier”

and some “later” than others. Because diegeses are discourses when read, we may therefore say that there are “discursively earlier” and “discursively later” diegeses based on their respective discourses’ completion dates. The 1937 edition of *The Hobbit* is read as a discursively earlier diegesis and the 1951 edition a discursively later diegesis, regardless of the order of events that those diegeses detail. We may also say there are “diegetically earlier” and “diegetically later” diegeses based precisely on the internal chronological order of such detailed events—and regardless of the completion order of the respective discourses.

Fifth, no two readers may read the same discourse in precisely the same way. Even so, typically there would remain overlap. If extensive, call the resulting diegesis ‘the diegesis’.⁹ There may be more than one such overlap. As explained below, many read the 1937 edition of *The Hobbit* the discourse as revised by the 1951 edition. Not all however do, and none reading the 1937 edition before the 1951 edition was published did. No matter how slight other differences in readings, we may say that in this case with the 1937 edition the discourse is read as two different diegeses. Each would be the diegesis relative to a particular community of readers. We say more in Chapter 3 about such relativity.

Sixth, as the author creates her discourse, she herself reads it. The author’s reading of a discourse is not definitive of how the discourse must be read. It is therefore not definitive of the diegesis that results. The author is however an especially well-informed reader. While there is no guarantee that we can always determine how Tolkien read his discourses, their publication history is suggestive. Hence, though those discourses need not be read as such, we have reason—though, as explained below, do not need—to read them as we think that Tolkien did. We say more in Chapter 3 about the role of an author’s intentions.

World

Besides calling a completed text a ‘discourse’ and the linguistic object constituted by the discourse when read a ‘diegesis’, call all individuals, objects, and events to which a diegesis refers a ‘world’. Diegeses contain chapters, sentences, and words, which are linguistic objects (broadly construed). Worlds contain the referents of those chapters, sentences, and words—including individuals, objects, and events—which are worldly objects (broadly construed). Because chapters, sentences, and words might refer directly to some things but inferentially to others, depending on how one counts there may be more worldly than linguistic objects when a discourse is read.

Nonetheless no diegesis provides complete details of a world. Each leaves some vague while remaining uncommitted to others. All diegeses ultimately refer to a set of somewhat distinct worlds sharing such vagueness and uncommittedness. Just as ‘the diegesis’ refers to an extensive

overlap of diegeses constituted when the same discourse is read, call ‘the world’ the extensive overlap of worlds to which the diegesis refers. Hence, just as more than one diegesis may be called ‘the diegesis’, more than one world may be called ‘the world’. Though not every author names her world, the 1937 edition of *The Hobbit* refers to the world of Middle-earth. What is a world?

While we do not agree with everything that he says, a good place to start is David Lewis’s observation that that “[t]he world we live in is a very inclusive thing” (1986/2001, 1). *The world we live in*, for Lewis and for us, is the *actual* world—the one and only. There are two ways to appreciate why there is just one. First, as explained in Chapter 3, the actual world understood diegetically is the factual world. Just as there are no such things as “alternative” facts, there is no such thing as an alternative factual, and so actual, world. Second, as Lewis explains, the actual world is so inclusive that, perhaps except for certain abstract objects, all existing things—all individuals, objects, and events—are contained within it. Regarding abstracta, though suggesting that pure sets might be worldbound Lewis maintains that (other) abstracta

inhabit no particular world but exist alike from the standpoint of all worlds, just as they have no location in time and space but exist alike from the standpoint of all times and places.

(1973/2001, 39)

By ‘abstracta’ Lewis means not only types but also non-spatiotemporal tokens, such as numbers. Contra Lewis, we maintain that discourses and diegeses, as both types and tokens, exist in the actual world. Tolkien, recall, published a type, which is abstract. And he published it in the actual world.

Regardless, for Lewis, and on this we do agree, a *possible* world is any maximally consistent state of affairs, including the actual such state. A *merely* possible world is any maximally consistent state of affairs that is not the actual state. Such a world is a way in which the actual world might have been but is not:

[T]hings might have been different, in ever so many ways. . . . I might not have existed. . . . Or there might not have been any people. Or the physical constants might have had somewhat different values. . . . Or there might have been altogether different laws of nature. . . . There are ever so many ways that a world might be; and one of these many ways is the way that this world is.

(1986/2001, 1–2)

While there is only one actual world, which is itself possible, there is an infinity of merely possible worlds.¹⁰

Lewis also maintains that all possible worlds, and not just the actual, are real in the sense of existing independently of us. That reality is also concrete. Possible worlds are not abstract (his “ersatz”) objects. We agree that the actual world is real. Because it has no effect on our view, we remain neutral on whether merely possible worlds are concrete or abstract. The more general metaphysics of merely possible worlds is nevertheless more contentious. Are they real, somehow semi-real, or not real at all?

The most famous proponent of a realist view is Lewis (1986/2001) himself. For Lewis, the actual world differs from merely possible worlds only because it is ours. Merely possible individuals would (in our English) call their worlds ‘actual’ too and would be right to do so relative to their world. The most famous proponent of what might be regarded as a semi-realist view is Alexius Meinong (1904/1960). For Meinong, there are actual as well as merely possible objects, and we might expand the distinction to worlds. Actuals exist, while merely possibles subsist. Existence is a greater, subsistence a lesser, form of reality.¹¹

The most famous proponent of an anti-realist view is Saul Kripke (1970/2005). For Kripke, merely possible objects or worlds do not exist. Talking about them is merely metaphorical. Yet the metaphor packs metaphysical punch, as possible worlds model counterfactuals, dispositions, and modalities.

We agree with Kripke when he agrees with Lewis that talk of possible worlds is useful to enough to be sanctioned. Whether mere *possibilia* are real, semi-real, or not real is for our purposes unimportant. Yet we are sympathetic with Lewis:

talk of *possibilia* has clarified questions in many parts of the philosophy of logic, of mind, of language, and of science—not to mention metaphysics itself. Even those who officially scoff often cannot resist the temptation to help themselves abashedly to this useful way of speaking.

(1986/2001, 3)

We accept Lewis’s point and expand it. Not only is general talk of possible worlds sufficiently useful, but specifically realist talk is useful too. Whether or not mere *possibilia*, worlds or objects, are real in Lewis’s sense, we talk as though they are.¹²

We now turn to Tolkien’s three discourses. There is reason, it turns out, to read each discourse as more than one diegesis referring to more than one world.

Rebooting Bilbo

As we read them, the 1937 and 1951 editions of *The Hobbit* both begin with the wizard Gandalf’s inviting the eponymous hobbit, Bilbo Baggins,

on an adventure with dwarves. Both explain in Chapter 5, “Riddles in the Dark,” that finding himself in a tunnel Bilbo happened upon “a tiny ring of cold metal lying on the floor” (2002, 115),¹³ which he put in his pocket. Both explain that Bilbo then encountered “old Gollum, a small slimy creature” (118), who engaged him in a game of riddles. And both make clear that, if Bilbo lost, then Gollum was to eat him. If he won however—which he did—then what was to happen differed between editions.

In the 1937 edition, Gollum was to give Bilbo the ring that Bilbo had coincidentally just found. When Bilbo did win, “Gollum begged Bilbo’s pardon. He kept on saying: ‘We are ssorry; we didn’t mean to cheat, we meant to give it our only present, if it won the competition’” (129). Figuring that he would have got the ring regardless, and discovering that it turned its wearer invisible, Bilbo said nothing as Gollum led him out of the tunnel. Gollum did so intentionally, regretting that he could not give Bilbo his ring as a prize.

In the 1951 edition, Gollum was to show Bilbo the way out of the tunnel directly. Yet Bilbo “felt he could not trust this slimy thing to keep any promise at a pinch” (127). Indeed, Gollum never intended to keep his promise, convinced that Bilbo was after his ring. Gollum searched for it so that he could put it on, turn invisible, and—cheating at the riddle-game—eat Bilbo. Instead, Bilbo put on the ring, turned invisible, and followed Gollum, who led him out of the tunnel. Gollum did so unintentionally, planning instead to eat him.

As we read them, Tolkien revised the 1937 edition of *The Hobbit* with the 1951 edition to make Bilbo’s adventure continuous with *The Lord of the Rings*, which he began writing after finishing the 1937 edition and published in 1954 and 1955. In *The Lord of the Rings*, we learn that the ring that Bilbo found is the One Ring, forged by the Dark Lord Sauron. *The Lord of the Rings* then details how Bilbo’s heir, Frodo, has a more perilous adventure. Because of the ring’s corrupting influence, Gollum would never have intended—as the 1937 edition Gollum did—to give Bilbo it as a prize. Nor would Gollum ever have led Bilbo out of the tunnel intentionally. In the 1951 edition Tolkien therefore revised individuals, objects, and events from the 1937 edition so that he could expand them into the drafted though yet unpublished *The Lord of the Rings*. What is involved in revision?

The revision with which we are interested comes in three kinds. The first is non-linear. It restarts and replaces an already existing diegesis with a new one, as the 1951 edition of *The Hobbit* is read as restarting and replacing the 1937 edition. Revising as such changes a discourse by adding or deleting words. Adding and deleting is part not only of revising but also of writing. Works in progress undergo multiple revisions while being written. Restarting and replacing in our sense requires a discourse to have been completed and then for words to be added or deleted afterward. The point of completion is often but not always marked by publication.

To revise the 1937 edition of *The Hobbit* into the 1951 edition Tolkien deleted old words and added new ones. Yet most were simply copied, even in “Riddles in the Dark.” In terms of discourse Tolkien’s revision was small. In terms of resulting diegesis those changes were large. Without revising Bilbo and Gollum, the ring, and their encounter, *The Lord of the Rings* would not have expanded the story of *The Hobbit*. Tolkien revised the 1937 edition into the 1951 edition by changing the discourse and in turn the diegesis that the discourse when read constituted.

Small changes in discourses can cause large changes in diegeses—and ultimately the worlds to which the latter refer. Discursively the 1951 edition of *The Hobbit* begins as the 1937 edition does and at only certain spots changes only certain objects on only certain pages. Diegetically, though the individuals, objects, and events are similar, they are not the same. Rather than an honest Gollum, Bilbo encounters a dishonest one. Rather than merely joining Gandalf and the dwarves on an isolated adventure, Bilbo also sets into motion events told in *The Lord of the Rings*. Setting aside other diegetic moves that Tolkien later makes, the point of the 1951 edition is to reject the 1937 edition to make way for this larger expansion.¹⁴

Tolkien in “On Fairy-stories” (1947/1966), his essay on fantasy literature, distinguished a “secondary” world, in which individuals, objects, and events of a diegesis exist, from the “primary” world, in which (as we understand it) readers, including the author, of the correlative discourse exist. In Chapters 3 and 4 we extend Tolkien’s analysis to all diegeses. Here we adopt it to say that the 1937 and the 1951 editions of *The Hobbit* refer to two similar though at crucial points different “secondary” worlds. They might be thought of as two versions of Middle-earth. In the first, Bilbo, after happening upon a ring, encountered a Gollum who leads him out of the tunnel intentionally. In the second, Bilbo, after happening upon a ring, encountered a Gollum who leads him out of the tunnel unintentionally—which *The Lord of the Rings* then expands by continuing details about the ring, now in Frodo’s charge. Because the Bilbos and Gollums, rings, and encounters are detailed in the different editions of *The Hobbit* as having contradictory properties, their resulting worlds have contradictory properties too. Tolkien revised the discourse of the 1937 edition with the 1951 edition to revise the diegesis of the former with the latter. He thereby rejected the former world in favor of the latter.¹⁵

Thus the history of *The Hobbit*’s diegetic revision involved Tolkien’s writing two discourses that can be read as (at least) two diegeses. He therefore engaged in a complex use of language. Because he is not the only author to do so, one might expect that philosophers have things to say about the general phenomenon of restarting and replacing a diegesis to reject one world in favor of another. Almost universally no philosopher has.¹⁶ Even for the name of the phenomenon we must turn to an area that

has (until recently)¹⁷ received spare attention from philosophers, popular culture. By publishing a new discourse that readers then read, Tolkien used the 1951 edition to *reboot* the 1937 edition of *The Hobbit*.

'Reboot' originates in computer jargon for turning a computer off and on, closing all programs in the process, and losing all unsaved data. Tolkien "turned off" the world of *The Hobbit* in the 1937 edition and restarted it with the 1951 edition. Data were emptied from memory as the diegesis reset. Like a computer reboot, a diegetic reboot has much in common with what preceded it. The same software can run and data can be inputted. Nonetheless there is no numerical identity between pre- and post-rebooted states or worlds. In Tolkien's case there is no qualitative identity either. The Gollum in the 1937 edition and the Gollum in the 1951 edition do not have the same properties. They have different dispositions and perform different acts. The corresponding Bilbos are not the same either. One is led out of the tunnel by (one) Gollum intentionally, while the other is led out of the tunnel by (another) Gollum unintentionally. The rings, passing between different individuals, also are not the same. Nor are the events of their passing. They all exist in similar though nevertheless different worlds, the discursively earlier of which is rejected. Call the 1951 edition the 'rebooting diegesis', since it causes the reboot. Call the 1937 edition the 'rebooted diegesis', since it is rebooted. And call the diegetic revision that the rebooting diegesis causes the rebooted diegesis to undergo a 'reboot'.

The analogy between computer and diegetic reboots is doubly imperfect. First, while in the computer case data before and after the reboot need not have much in common, in the diegetic case individuals, objects, and events do. Otherwise they would not be rebooting and rebooted but simply two unrelated diegeses. Though the Bilbos and Gollums, rings, and encounters are neither numerically nor qualitatively identical, they are significantly qualitatively similar. Second, also unlike in the computer case, the rebooting diegesis alludes significantly to the rebooted diegesis. Anyone reading the 1951 edition of *The Hobbit* after having read the 1937 edition would experience many details from the later edition as repetitions of those from the earlier and many others as significantly similar to them. In that sense anyone reading the 1951 edition after reading the 1937 edition would experience details of the 1951 edition as having previously occurred. Yet, from the perspective of the discursively later diegesis, the diegetic slate is wiped clean. While the reader recognizes that Bilbo and Gollum, the ring, and their encounter in the 1951 edition allude to similar individuals, objects, and events in the 1937 edition, the respective Bilbos and Gollums themselves cannot recognize this. The later Bilbo cannot remember that at one point Gollum was honest. That is because that Bilbo never met that Gollum. The later Bilbo cannot remember that Gollum led him out of the tunnel intentionally. That Bilbo was not so led. The two Bilbos and two Gollums exist in different worlds,

even though readers of both editions of *The Hobbit* experience each later one as alluding to each earlier one.¹⁸

Hence a reboot is a diegetic revision that a rebooting diegesis causes a rebooted diegesis to undergo, where:

- (1) The rebooted diegesis is a discursively earlier diegesis constituted when an earlier discourse is read. The rebooting diegesis is a discursively later diegesis constituted when a later discourse is read.
- (2) The rebooted and rebooting diegesis refer to different worlds, the former of which is rejected.
- (3) The rebooting diegesis alludes to details from the rebooted diegesis in such a way that a reader experiences those details as having previously occurred.
- (4) Despite the rebooting diegesis's being allusive, because the diegeses refer to different worlds, the individuals, objects, and events in the world to which the rebooting diegesis refers, and those in the world to which the rebooted diegesis refers, cannot interact. Further, individuals in the world to which the rebooting diegesis refers cannot be aware of anything distinct about the world to which the rebooted refers, and so cannot be aware of any allusions to it.

Because rebooting and rebooted diegeses are kinds that concern how diegeses are revised, they are the first of what we call 'diegetic-revisionary kinds'. Our response-dependence account of diegeses applies to them. Just as diegeses generally are constituted when discourses are read, rebooting and rebooted diegeses specifically are constituted when discourses are read as either kind.¹⁹

Retconning Bilbo

Tolkien went there and back again when he wrote and rewrote *The Hobbit*. We need to go there and back again to explain the next stage of the history of its diegetic revision.

Before rebooting the 1937 edition of *The Hobbit*, Tolkien's revisionary road forked. The fork off the main road that he took led to restarting and replacing, and therefore rebooting, the 1937 edition with the 1951 edition. Tolkien could however have remained on the main road by reinterpreting and revealing details of 1937 edition with those of *The Lord of the Rings*. Instead of rebooting the 1937 edition with the 1951 edition, Tolkien could have explained how, though it seems to contradict *The Lord of the Rings*—whose Bilbo, Gollum, and ring (as explained below) are those of the 1951 edition—the 1937 edition does not contradict it. Tolkien could have reinterpreted and revealed things about the 1937 edition so that it and *The Lord of the Rings* referred to the same world. Rather than two Bilbos, Gollums, rings, and encounters, as in a

reboot, there would instead be only one of each. While the two different Bilbos could not interact with each other, this one Bilbo could interact with himself, along with (the one) Gollum and the ring as they encounter one another.²⁰

We have claimed that the revision with which we are interested comes in three kinds. Rebooting, the first, is non-linear. It involved Tolkien's taking the fork in the revisionary road. We are now imagining a second kind of revision that is linear. It reinterprets and reveals details about an already existing diegesis rather than restarting a new one. Rather than taking the fork, Tolkien returns to the main road though reinterprets and reveals things about it. Like adding and deleting words from a work in progress, reinterpretation and revelation are a common writing strategy. Reinterpreting permits a writer to reveal something previously not explained that would otherwise seem contradictory until the revelation occurs. After the reinterpretation the reader takes details to have been previously incorrect and is given a revelatory explanation why they are not. By ordering sentences discursively in a way that disorders details diegetically, an author can withhold details until later in a reader's experience.²¹

The reinterpretation and revelation with which we are concerned is special. Like rebooting, this sort of revision occurs only after a discourse is completed. Unlike rebooting, reinterpreting and revealing involve only adding words. The new words also are not inserted between previous words but instead placed in an entirely new, later discourse. The earlier discourse remains unchanged. In publication order the later revelatory diegesis is constituted by the later discourse when read. After a reinterpretation and revelation, we learn a new interpretation of old details.

When Tolkien published the 1951 edition of *The Hobbit*, he non-linearly revised the 1937 edition by restarting it. Nonetheless, as Tolkien stood at the fork in the revisionary road, he apparently worried that rebooting was inadequate. While the 1951 edition replaced the 1937 edition's world, it could not replace the 1937 edition's discourse. Physical copies of the discourse remained. The 1937 diegesis itself therefore continued to exist for anyone reading it. Tolkien wanted to make *The Lord of the Rings* a continuation not just of the 1951 edition, which it explicitly was, but also in a way of the 1937 edition. So Tolkien revealed in *The Lord of the Rings* a new interpretation of the 1937 edition. Because the ring corrupts, Bilbo lied about his encounter with Gollum. That lie made it into the 1937 edition, while the truth made it into the 1951 edition. Moreover that lie explains why the account in *The Lord of the Rings* seems to contradict the account in the 1937 edition. *The Lord of the Rings* revised the 1937 edition by reinterpreting that seeming contradiction away in two passages.²²

First, in "Of the Finding of the Ring" in the Prologue (printed in the first volume, *The Fellowship of the Ring*, published in 1954), after

summarizing Bilbo's encounter with Gollum as detailed in the 1951 edition of *The Hobbit*, Tolkien explains:

Now it is a curious fact that this is not the story as Bilbo first told it to his companions. To them his account was that Gollum had promised to give him a *present*, if he won the game.

(Tolkien 1954–55/1994, 21)

This is the account in the 1937 edition, which the 1951 edition was written to replace. Tolkien reveals how the account nevertheless made it into the 1937 edition:

This account Bilbo set down in his memoirs, and he seems never to have altered it himself. . . . Evidently it still appeared . . . in several of the copies and abstracts. But many copies contain the true account (as an alternative), derived no doubt from notes by Frodo and Samwise, both of whom learned the truth, though they seem to have been unwilling to delete anything actually written by the old hobbit himself.

Though we qualify this later, Tolkien's point is that the true account of Bilbo's encounter with Gollum appeared in the 1951 edition. The earlier, false account appeared "in several . . . copies," i.e., in the 1937 edition, because Frodo and his companion Samwise, who knew the true account, let it stand. This explains the 1937 and 1951 editions diegetically and in some sense discursively. Diegetically they exist because the earlier account contains lies while the later account contains (now-corrected) truths. Discursively the two editions exist because Frodo and Samwise were unwilling to delete the earlier version in their world, which amounts to Tolkien's being unable to remove its publication in our world, even though the later edition was in circulation. Tolkien even reveals that initially not everyone was deceived by the earlier account:

Gandalf, however, disbelieved Bilbo's first story, as soon as he heard it Eventually he got the true tale out of Bilbo after much questioning, which for a while strained their friendship; but the wizard seemed to think the truth important.

Gandalf knew all along that the version of events that Bilbo told, which made it into the 1937 edition, was false. This is so even though there is no hint in the 1937 edition that Gandalf thought this. Gandalf's behavior toward Bilbo may even seem to contradict his knowing, though *The Lord of the Rings* now explains what would otherwise seem to be this contradiction away.

Second, in “The Council of Elrond,” book two, chapter two of *The Fellowship of the Ring*, Tolkien had Bilbo himself confess that his initial account was false: “I will now tell the true story, and if some here have heard me tell it otherwise’—at which he looked sidelong at Glóin—‘I ask them to forget it and forgive me” (262). Glóin was one of the dwarves whom Gandalf chose to accompany Bilbo on his adventure, to whom Bilbo now revealed that, as recorded in the 1937 edition, he had lied. Regardless, like Gandalf, Bilbo also seemed to think the truth important. So corrupting was the ring, however, that Bilbo took longer to think it.

Hence Tolkien first took the fork in the road when he revised the 1937 edition of *The Hobbit* by restarting and replacing it. He then went there and back again to the 1937 edition when he returned to the main road by reinterpreting and revealing things about where he had already trodden. In the latter as in the former Tolkien engaged in a complex use of language. Nor again is he the only author to revise in a way that reveals something that reinterprets something old about a pre-existing world. Again almost universally no philosopher has noted the phenomenon.²³ While restarting a diegesis characterizes a reboot, reinterpreting a diegesis by revealing diegetic details about it so that seeming contradictions are explained away characterizes a *retcon*.

‘Retcon’ originates in popular-culture discussions of the process by which a discursively later diegesis reveals something about a discursively earlier diegesis while providing its next diegetic installment. It is a contraction of ‘retroactive continuity’, which independently appeared in Biblical scholarship to characterize how the resurrected Jesus Christ was understood to relate to the apparently human Jesus before revealed as the Son of God.²⁴ Etymologically ‘retcon’ should mean any diegetically earlier insertion regardless of whether it involves both reinterpretation and revelation or only the latter. Popularly however a ‘prequel’ (discussed later) is meant to be distinct from a ‘retcon’ despite its also being retroactively continuous. Ignoring the wider scope implied by its name, call ‘retcon’ any retroactively continuous revision that involves both reinterpretation and revelation.

Tolkien used *The Lord of the Rings* to reinterpret, and therefore retcon, the 1937 edition of *The Hobbit* by revealing details about it. Moreover, because both *The Lord of the Rings* and the reinterpreted 1937 edition of *The Hobbit* refer to the same world, unlike in a reboot the world of the 1937 edition remains accepted. Call *The Lord of the Rings* the ‘retconning diegesis’, since it causes the retcon. Call the 1937 edition the ‘retconned’ diegesis, since it is retconned. And call the diegetic revision that the retconning diegesis causes the retconned diegesis to undergo a ‘retcon’.

Hence a retcon is a diegetic revision that a retconning diegesis causes a retconned diegesis to undergo, where:

- (1) The retconned diegesis is a discursively earlier diegesis constituted when an earlier discourse is read. The retconning diegesis is a discursively later diegesis constituted when a later discourse is read.
- (2) The retconned and retconning diegeses refer to the same world, which remains accepted.
- (3) The retconning diegesis reinterprets details from the retconned diegesis in such a way that a reader experiences those details as having been previously incorrect.
- (4) Because the diegeses refer to the same world, readers take the former to have been revealed as consistent with the latter. Further, individuals, objects, and events in that world can interact, and so individuals can be aware of the reinterpretation.

Retconning and retconned diegeses are two more diegetic-revisionary kinds. Each is constituted when discourses are read as either kind. Above we called ‘the diegesis’ the overlap of diegeses constituted when a discourse is read by multiple readers. Let us more specifically mean that overlap insofar as it is taken to be a particular kind of diegesis.

So far we have considered rebooting, rebooted, retconning, and retconned diegeses. We can then speak of “the rebooted diegesis” and “the retconned diegesis” constituted by the 1937 edition of *The Hobbit* the discourse when read, and “the rebooting diegesis” and “the retconning diegesis” constituted by the 1951 edition and *The Lord of the Rings* the discourses when read. That the 1937 edition is a rebooted diegesis relative to the 1951 edition and a retconned diegesis relative to *The Lord of the Rings* makes explicit that being a particular diegetic-revisionary kind is a dyadic property. The 1937 edition can be read as two different kinds of diegeses because each kind relates it to a different diegesis.

Expanding Bilbo

Tolkien took the revisionary fork in the road when he rebooted the 1937 edition of *The Hobbit* with the 1951 edition, only to return to the main revisionary road when he retconned the 1937 edition with *The Lord of the Rings*. Tolkien thereby established the revision between the 1937 edition and *The Lord of the Rings* as linear. How does the 1951 edition relate to *The Lord of the Rings* itself?

Tolkien initially rebooted the 1937 edition of *The Hobbit* with the 1951 edition because he wanted Bilbo’s adventure, as detailed in the 1951, to be continuous with Frodo’s, as detailed in *The Lord of the Rings*. The third kind of revision, between the 1951 edition and *The Lord of the Rings*, is linear also. It involves an existing world rather than a new one. But it is not a retcon. Though some details in *The Lord of the Rings* might be revelatory by adding to what we know—in the 1951 edition Bilbo’s ring is identified as a ring of power, while in *The Lord of the Rings* it is

also identified as the One Ring—such revelatory details do not reinterpret earlier details that would otherwise seem contradictory until the revelation occurred. Descriptions of the ring in the 1951 edition are simply incomplete. In *The Lord of the Rings* a reader learns something new about something old, but no prior details are at odds. The ring, now discovered to be the One Ring, remains a ring of power. Nor are descriptions of Bilbo and Gollum, the ring, or their encounter, or other individuals, objects, or events contradictory. *The Lord of the Rings* revises the 1951 edition by expanding details in it in such a way that a reader experiences those details as having been previously incomplete but not, as would be the case in a retcon, incorrect.²⁵ Regardless, as with the retcon but not the reboot, there remains only one Bilbo, Gollum, ring, and encounter. Because *The Lord of the Rings* expands the 1951 edition so that both refer to the same world, the world of the 1951 edition remains accepted. Tolkien's revisionary road does not fork again. He remains on the fork caused by the 1951 edition's rebooting the 1937 edition. He simply *expands* it.²⁶

'Sequel' has been popularly used to mean an expansion that adds details to a previously terminal point. 'Prequel' has been used ambiguously to mean one that adds details either to a previously initial or to any non-terminal point. There are also rarer terms such as 'interquel', which has been used to mean an expansion that adds details to a previously intermediary point; 'paraquel', which adds details simultaneous to other details; and others. Because all these terms are interdefinable, they all suffer from the ambiguity of 'prequel'. They suffer from other ambiguities also. Instead of diegetic order, 'sequel', 'prequel', et al., each has been used to indicate discursive (or publication) order. *The Lord of the Rings* is the *diegetic* sequel to the 1951 edition of *The Hobbit* because it adds details to the 1951 edition's terminal point. It is also its *discursive* sequel because it was published after it. Only diegetic sequels, prequels, et al., are expansions in our sense. 'Prequel' particularly has been used as well to name a retcon that contains details occurring prior to the diegesis in question though those details reinterpret rather than continue other ones. Such a "prequel" is a retcon.

Given all these concerns, we employ 'expansion' only in the diegetic sense but do so generally. Sequels, prequels, et al., so long as they are not retcons, are expansions. Call *The Lord of the Rings* the 'expanding' diegesis, since it causes the expansion of the 1951 edition. Call the 1951 edition the 'expanded' diegesis, since it is expanded. And call the diegetic revision that the expanding diegesis causes the expanded diegesis to undergo an 'expansion'.

Hence an expansion is a diegetic revision that an expanding diegesis causes an expanded diegesis to undergo, where:

- (1) The expanded diegesis is a discursively earlier diegesis constituted when an earlier discourse is read. The expanding diegesis is a discursively later diegesis constituted when a later discourse is read.

- (2) The expanded and expanding diegeses refer to the same world, which remains accepted.
- (3) The expanding diegesis contains details diegetically continuing those from the expanded diegesis in such a way that a reader experiences those details as having been previously incomplete.
- (4) Because the diegeses refer to the same world, readers take them to be part of a larger diegetic order. Further, individuals, objects, and events in that world can interact, and so individuals can be aware of the old and new details.

Expanding and expanded diegeses are likewise diegetic-revisionary kinds. Each is constituted when discourses are read as either kind. We can now speak of “the rebooting diegesis” and “the expanded diegesis” constituted by the 1951 edition of *The Hobbit* the discourse when read, and “the retconning diegesis” and “the expanding diegesis” constituted by *The Lord of the Rings* the discourse when read.²⁷

Hobbit Holdouts

Tolkien engaged in three kinds of revision: reboots, which are non-linear, and retcons and expansions, which are linear. Different discourses are read by different readers as different diegeses, and we read Tolkien’s as all these:

- (1) The 1937 edition is a rebooted, retconned, and expanded diegesis.
- (2) The 1951 edition is a rebooting and expanded diegesis.
- (3) *The Lord of the Rings* is a retconning and expanding diegesis.

Yet these discourses may also be read as none of those.

Suppose that someone reads a discourse as a rebooting, retconning, or expanding diegesis. Someone else might *hold out* against so reading it. She might read a discourse that would otherwise be read as a rebooted, retconned, or expanded diegesis instead as diegetically complete, admitting no revision. She would likewise read it as diegetically isolated, disconnected from the discursively later diegesis. And she would read it as diegetically definitive, providing the correct account of individuals, objects, and events. While someone regarding a discursively later diegesis as rebooting a discursively earlier one rejects the discursively earlier one, a holdout rejects a discursively later diegesis. She thereby rejects how the discursively later diegesis revises the discursively earlier one. Such a holdout returns to an earlier point on the revisionary road and recognizes the point of revision—regardless of kind—itself as a fork, which she rejects. Though such a holdout rejects rather than revises a diegesis, her rejection is therefore non-linear because she regards the revision itself as a fork. As in a reboot, she takes the revision—whether those who accept it regard it as a reboot, retcon, or expansion—as restarting and replacing

an already existing diegesis with a new one. Unlike in a reboot, however, she does not proceed down what she takes as the fork, turning off the main road. Rejecting the fork, she remains on the main and proceeds no further, regarding that point as its end.

Holdout positions are not uncommon in philosophy. As we read them, the later (“B”) edition of Immanuel Kant’s *Critique of Pure Reason*, or “First *Critique*,” published in 1787, reboots the earlier (“A”) edition, published in 1781, by providing an account of the scope and limits of pure theoretical reason that alludes to the earlier edition while restarting it. Some reject the later edition and read the earlier as complete, isolated, and definitive. Perhaps Martin Heidegger (1929/1997) is one such holdout.²⁸ Likewise, the *Critique of Practical Reason*, or “Second *Critique*,” published in 1788, retcons the *Groundwork of the Metaphysics of Morals*, or “*Groundwork*,” published in 1785, by deriving freedom from consciousness of our obligation to the moral law—now taken simply as a “fact of reason” (5:29–31)—rather than deriving obligation to the moral law from freedom (4:451–53). Some reject the Second *Critique* and read the *Groundwork* as complete, isolated, and definitive. Most who teach Kant’s ethics are such holdouts. Finally, the *Critique of the Power of Teleological Judgment*, or “Third *Critique*,” published in 1790, expands the “B” edition of the First *Critique* and the Second *Critiques* by expanding the role that judgment plays in theoretical and practical philosophy, respectively. Some reject the Third *Critique* and read the First and the Second as complete, isolated, and definitive. Many who write on and nearly all who teach the First or Second *Critique* are such holdouts.²⁹

Regardless of kind, holdouts might be motivated by historical interest, wishing to understand a discourse as originally read rather than as read having been rebooted, retconned, or expanded. They might be motivated by aesthetic preference, finding a discursively earlier diegesis simpler, more persuasive, or otherwise more appealing. Or they might be motivated by other reasons too. In each case holdouts “hold out” against how discursively later diegeses revise discursively earlier ones. Whether the rejected revision is non-linear, as in a reboot, or linear, as in a retcon or expansion, rejections themselves are non-linear. The holdouts non-linearly take the later diegeses to fork from the main road, on which the holdouts themselves remain.

Like these various Kantian holdouts, there can also be Hobbit holdouts:

- (i) Instead of reading the 1937 edition as having been rebooted by the 1951 edition, the holdout rejects the discursively later diegesis and reads the discursively earlier one as complete, isolated, and definitive.
- (ii) Instead of reading the 1937 edition as having been retconned by *The Lord of the Rings*, the holdout rejects the discursively later diegesis and reads the discursively earlier one as complete, isolated, and definitive.

- (iii) Instead of reading the 1951 edition as having been expanded by *The Lord of the Rings*, the holdout rejects the discursively later diegesis and reads the discursively earlier one as complete, isolated, and definitive.

As with reboots, with all these holdouts the discursively later diegeses allude to details from the discursively earlier diegesis. Anyone reading the 1951 edition after having read the 1937 edition, as in (i); *The Lord of the Rings* after the 1937 edition, as in (ii); and *The Lord of the Rings* after the 1951 edition, as in (iii), would experience many details from the discursively later diegesis as repetitions of those from the discursively earlier diegesis. This time however that is because the reader rejects the discursively later diegesis. She does so because she understands it as having contradictory details. In (i), Bilbo in the 1937 edition is the hobbit led out of the tunnel by Gollum intentionally, while Bilbo in the 1951 edition is the hobbit led out of the tunnel by Gollum unintentionally. The holdout rejects the latter because it contradicts her preferred diegesis. In (ii), Bilbo in the 1937 edition is (still) the hobbit led out of the tunnel by Gollum intentionally, while Bilbo in *The Lord of the Rings* is (again) the hobbit led out of the tunnel by Gollum unintentionally. Here too the holdout rejects the latter because it contradicts her preferred diegesis. And in (iii), Bilbo in the 1951 edition is the hobbit who encounters Gollum and the ring, while Bilbo in *The Lord of the Rings* is the hobbit who is later encountered by Frodo, who is on a quest to destroy the ring. The holdout rejects the latter also and for the same reason. Indeed the holdout reads the discursively earlier and later diegeses as referring to different worlds. In each case the Bilbo in the discursively earlier diegesis is not the same Bilbo as in the discursively later diegesis because they have contradictory properties. Moreover, when the holdout rejects the discursively later diegesis, she rejects the later Bilbo and Gollum, ring, and their encounter—as well as their entire world.³⁰

‘Holdout’ ordinarily means one who rejects a change by remaining committed to the earlier state of affairs, though as far as we know it has not been used in this diegetic-revisionary context. Regardless call these privileged diegeses ‘holdout diegeses’. Call the rejected diegeses ‘rejected diegeses’. Call the diegetic revision that the holdout diegesis rejects itself a ‘holdout’, just as we call the person who holds out by initiating it. And call the process whose product is a holdout diegesis to ‘hold out’. The process is named with two words, and its agent and product with one. Philosophers have generally ignored the phenomenon of holdouts too.³¹

A holdout is the rejection of a discursively later diegesis that others read as revising a discursively earlier diegesis, and with it the diegetic revision itself, where

- (1) The holdout diegesis is a discursively earlier diegesis constituted when an earlier discourse is read. The rejected diegesis is a discursively later diegesis constituted when a later discourse is read.

- (2) The rejected and holdout diegeses refer to different worlds, the former of which is rejected.
- (3) The rejected diegesis alludes to details from the holdout diegesis in such a way that a reader experiences those details as having previously occurred.
- (4) Despite the rejected diegesis's being allusive, because the diegeses refer to different worlds, individuals, objects, and events in the world to which the holdout diegesis refers, and those in the world to which the rejected diegesis refers, cannot interact. Nor can individuals from the world to which the rejected diegesis refers be aware of anything distinct about the world to which the holdout diegesis refers, and so cannot be aware of any allusions to it.

Because they are implicated in a diegetic revision, we may treat holdouts and rejected diegeses as diegetic-revisionary kinds, each constituted when discourses are read as either kind. We can now also speak of “the holdout diegesis” constituted by the 1937 edition of *The Hobbit* if otherwise read as rebooted, the 1937 edition if otherwise read as retconned, or the 1951 edition if otherwise read as expanded—and “the rejected diegesis” constituted by 1951 edition if otherwise read as rebooting, *The Lord of the Rings* if otherwise read as retconning, and *The Lord of the Rings* if otherwise read as expanding—respectively, when read.

Holdout and rejected diegeses are discursively distinct in the same way in which rebooted and rebooting diegeses are. The difference is that in reboots the discursively later diegesis is preferred. In holdouts the discursively earlier diegesis is.³²

We identify two groups of *Hobbit* holdouts. First, enough readers hold out for historical interest, aesthetic preference, or other reasons, against both the rebooting of the 1937 edition of *The Hobbit* by the 1951 edition and the retconning of the 1937 edition by *The Lord of the Rings*, that HarperCollins Publishers recently republished the 1937 edition (Tolkien 2017). Its readers read the 1937 edition (republished or otherwise) as complete, isolated, and definitive—its individuals, objects, and events different from those of the 1951 edition and *The Lord of the Rings*. They therefore read the 1937 edition as a holdout diegesis and the 1951 edition and *The Lord of the Rings* as rejected diegeses. Second, Corey Olsen (2012) holds out against both the rebooting of the 1937 edition by the 1951 edition and the expanding of the 1951 edition by *The Lord of the Rings*. He therefore has two holdout diegeses, the 1937 and 1951 editions, sharing the same rejected diegesis, *The Lord of the Rings*. Not distinguishing editions, Olsen writes: “I want us to read *The Hobbit* on its own grounds” (14), and so as complete, isolated, and definitive. Olsen is apparently motivated by historical interest to understand *The Hobbit* as originally read. He is also apparently motivated by aesthetic preference. Unless we read *The Hobbit* on its own grounds, “we will not really be paying attention to the ideas that *this* story is interested in,” where those

ideas are more appealing when read as details in a complete, isolated, and definitive diegesis. Olsen also agrees that each holdout diegesis and its rejected diegesis refer to different worlds: “The Gandalf who shows up at Bag-End [Bilbo’s home] in Chapter One of *The Hobbit* is not exactly the same character who helps to host Bilbo’s farewell party in Chapter One of *The Fellowship of the Ring*” (14), the first volume of *The Lord of the Rings*. Olsen rejects the latter.³³

Reconstructing Bilbo

Focusing on pre- and post-revision worlds also reveals a complexity in which a diegesis can be revised without its discourse also being revised. While reading *The Lord of the Rings* as retconning the 1937 edition of *The Hobbit* reinterprets the 1937 edition so that Bilbo is led out of the tunnel by Gollum unintentionally but lied about it, the 1951 edition might seem to be read as detailing the same. The 1951 edition tells “the true account” (1954–55/1994, 21), as *The Lord of the Rings* explains, while the 1937 edition needs to be retconned by *The Lord of the Rings* to be true. Yet, strictly speaking, one cannot read the 1951 edition as detailing the same individuals, objects, and events as the 1937 edition once retconned. Because the 1951 edition is read as rebooting the 1937 edition, the 1937 and 1951 editions refer to different worlds.

Suppose however that one read the 1951 edition of *The Hobbit* not as rebooting the 1937 edition but instead as *reconstructing* how *The Lord of the Rings* retcons the 1937 edition. That would be to read the 1951 edition as resulting from the resources of the retconning diegesis (*The Lord of the Rings*) applied to the retconned diegesis (the 1937 edition). It would be to read the 1951 edition as a separate diegesis making explicit how *The Lord of the Rings* diegetically revises the 1937 edition. The 1937 edition could then be read as detailing a false version of the *same* world of which the 1951 edition details the true version. Both editions would refer to that one world.

Call the world of the 1937 edition ‘world-1’ and the world of the 1951 edition ‘world-2’. When *The Lord of the Rings* is read as retconning the 1937 edition, it refers to world-1. When *The Lord of the Rings* is read as expanding the 1951 edition, it refers to world-2. Reading the 1951 edition as a reconstruction permits setting aside world-2 and focusing on world-1.³⁴ The reconstruction permits understanding *The Lord of the Rings* as expanding the 1937 edition by reading it as expanding its reconstruction, the 1951 edition, directly. We can read *The Lord of the Rings* as continuing the “true account” detailed in the 1951 edition as well as revealing that the 1937 edition detailed a false account.

Call any third diegesis resulting from reading any first discourse as revised by any second discourse in a way that permits an expansion where there otherwise could be none a ‘reconstruction’. Here the third discourse is the 1951 edition of *The Hobbit*, the first is the 1937 edition,

the second is *The Lord of the Rings*, and the revision is a retcon. We consider other reconstructions of retcons in Chapter 7. The revision could also be a reboot. There a third diegesis would result from a first diegesis as rebooted by a second. The rebooted diegesis would be reconstructed to be read as expanded by the rebooting diegesis. We consider reconstructions of reboots in Chapter 5. The revision could not however be an expansion. An expansion is already permitted, since it already occurred.

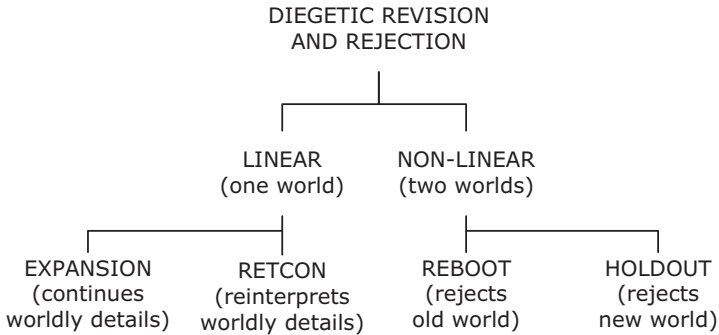
Like being a diegetic-revisionary kind, being a reconstruction is a relational property. While diegetic-revisionary kinds relate two diegeses, reconstructions relate three: the revised diegesis, the revising diegesis, and the resulting reconstruction. Unlike a diegetic-revisionary kind, a reconstruction supplements diegeses by permitting an expansion. Call reconstructions, like anything that supplements a diegesis, a ‘diegetic auxiliary kind’. Because not all diegetic auxiliary kinds are diegeses—in Chapter 5 we consider another that is but in Chapter 6 one that is not—‘diegetic’ modifies ‘auxiliary’ rather than their jointly modifying ‘kind’. So ‘diegetic auxiliary’ is not hyphenated. Conversely, because all diegetic-revisionary diegeses are diegeses, ‘diegetic’ and ‘revisionary’ do jointly modify ‘kind’. So ‘diegetic-revisionary’ is hyphenated.

Because reconstructions are kinds of diegeses, our response-dependence account of diegeses applies to them. A reconstruction is constituted when a discourse is read as such. More simply, a reconstruction is a discourse so read. Hence we read the 1951 edition in two ways. It is a rebooting diegesis whose rebooted diegesis is the 1937 edition. And it is a reconstruction of the 1937 edition as retconned by *The Lord of the Rings*.

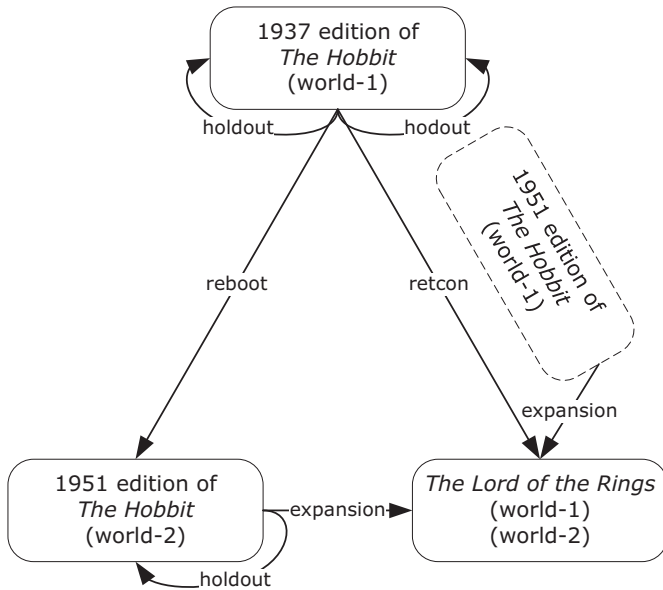
It is no coincidence that Tolkien’s discourses can be read as involved in a reconstruction. Taking the revisionary fork left Tolkien a rebooted diegesis. Returning to the main road left a retconned diegesis whose reinterpretation alluded to—but did not detail—individuals, objects, or events identical with those of the rebooted diegesis. The point of returning to the main road with the retcon was to ensure that readers who had not taken the fork could understand how the 1937 edition of *The Hobbit*, whose discourses still existed, related to *The Lord of the Rings*, just as well as those who had taken the fork could understand how the 1951 edition, written to make Bilbo’s adventures continuous with it, related to *The Lord of the Rings* too. That however left the connection between the 1937 and 1951 editions problematic. The way to reconcile them was to read the 1951 edition as referring to the same individuals, objects, and events as the 1937 as retconned by *The Lord of the Rings*. Reading it as a reconstruction does so.

Diegetic Diagrams

While other authors might revise their diegeses in fewer ways, Tolkien offers a case study of multiple kinds of diegetic revision and rejection as well as their relation to worlds and worldly details.



We may also diagram the history of Tolkien’s particular diegetic revision and possible holdouts. Here and in subsequent diagrams names of diegeses appear in boxes. A box’s borders are broken rather than solid to indicate a reconstruction. When convenient boxes include parenthetically the names of their respective worlds. Black arrows start at the discourse read as diegetically revising, or as a holdout against diegetically revising, the one to which those arrows end.



Consider the top box. First, the 1937 edition of *The Hobbit* is rebooted by the 1951 edition. The discursively earlier diegesis refers to world-1 and the discursively later diegesis world-2. Second, the 1937 edition is retconned by *The Lord of the Rings*. Both diegeses refer to world-1. And

third, the 1937 edition is a holdout diegesis, and either the 1951 edition or *The Lord of the Rings* is a rejected diegesis. The discursively earlier diegesis refers to world-1, and the discursively later diegesis world-2.

Consider the bottom left box. First, the 1951 edition of *The Hobbit* reboots the 1937 edition. The discursively earlier diegesis refers to world-1, and the discursively later diegesis world-2. Second, the 1951 edition is expanded by *The Lord of the Rings*. Both diegeses refer to world-2. And third, the 1951 edition is a holdout diegesis and *The Lord of the Rings* a rejected diegesis. The discursively earlier diegesis refers to world-2, and, though it might make sense to indicate the discursively later diegesis as referring to world-3 (a world to which none other refers) to avoid multiplying worlds beyond necessity we indicate its referring to world-1.

Consider the bottom right box. First, *The Lord of the Rings* retcons the 1937 edition of *The Hobbit*. Both diegeses refer to world-1. Second, *The Lord of the Rings* expands the 1951 edition. Both diegeses refer to world-2. Unlike the other two boxes, these two ways of reading *The Lord of the Rings* can occur together. *The Lord of the Rings* is therefore two diegeses each referring to different worlds. Unlike the 1937 or 1951 editions, however, *The Lord of the Rings* cannot be a holdout diegesis. It has no diegetic revision.

Finally, consider the diagonal box. The reconstruction of the 1951 edition of *The Hobbit* results from the 1937 edition as retconned by *The Lord of the Rings*. The reconstruction permits understanding *The Lord of the Rings* as expanding the 1937 edition by reading it as expanding this reconstruction. And all three diegeses refer to world-1.

Diegetic Pluripotency and Fallibilism

Because a discourse can be read as particular diegetic-revisionary and diegetic auxiliary kinds only relative to how other discourses are read, our response-dependence account of diegeses requires coordinate readings consistent with conditions of those readings. Regardless, so restricted, any discourse can be read as, and therefore be, any of eight diegetic-revisionary kinds: rebooting, rebooted, retconning, retconned, expanding, expanded, holdout, or rejected. It can also be read as, and therefore be, the one diegetic auxiliary kind so far recognized: a reconstruction. A biological analogy is apt. Cytologists explain that stem cells are pluripotent insofar as they can differentiate into any kind of cell. Discourses, we maintain, are pluripotent insofar as they can be read as any kind of diegesis. Further, there are reasons for stem cells to differentiate into one kind of mature cell rather than another, including other objects with which they interact. Likewise, there are reasons for readers to read discourses as one kind of diegesis rather than another, including other discourses that are read.

Two disanalogies between stem cells and discourses are noteworthy. First, a single stem cell can differentiate into a single kind of mature cell simpliciter. A discourse can be read as different kinds of diegeses relative to different communities of readers. Second, once a stem cell differentiates, its kind is fixed. After a discourse is read as one kind of diegesis, it could be reread as a different kind by the same or different communities. From both it follows that retcons, reboots, expansions, and their holdouts are always possible regarding diegeses. Discourses are more diegetically pluripotent than stem cells are cytologically so.

While in Chapter 4 we consider worries about the community relativism of diegetic pluripotency, here we compare it to a view in the philosophy of science. According to Charles Sanders Peirce, “fallibilism is the doctrine that our knowledge is never absolute but always swims, as it were, in a continuum of uncertainty and of indeterminacy” (1931–35, 1.171).³⁵ Fallibilism resurfaces in the work of Willard van Orman Quine: “no statement is immune to revision” (1951/2006, 43). Revision in Quine’s sense is not rejection. Something further might always be revealed. The only way in which what we think that we know could turn out to be incorrect, and something further might always be revealed, is if some later diegesis reinterprets some earlier diegesis as being incorrect.³⁶ Fallibilism applied to diegeses is the view that retconning is always possible. Fallibilism need not be a view only in the philosophy of science. The 1937 edition of *The Hobbit* was fallible because *The Lord of the Rings* was able to retcon it.

While ‘fallibilism’ is in the philosophical lexicon, no term names the views that expanding, rebooting, and holding out are always possible also. Rather than introducing additional terms, we apply ‘diegetic fallibilism’ to the view that any kind of diegetic revision is always possible. Diegetic fallibilism is implied by diegetic pluripotency. Any diegesis can always be retconned, expanded, or rebooted because any discourse can be read as a retconning, expanding, or rebooting diegesis. Any detail within any diegesis can always turn out to be incorrect, continued, or restarted, and there can also always be holdouts against any of these. We also apply ‘diegetic fallibilism’ to reconstructions. Any third diegesis can always result from reading any first discourse as revised by any second discourse in a way that permits an expansion where there otherwise could be none.

Diegetic-Revisionary Objection

In the next chapter we examine theories of reference and meaning of proper names explaining the diegetic logic of reboots, retcons, expansions, and holdouts. (Because reconstructions result from reboots or retcons, whichever theory explains the relevant revision explains the diegetic logic of the reconstruction.) We close this chapter with an objection.

While we have read the 1951 edition of *The Hobbit* as rebooting the 1937 edition in toto, the 1951 edition seems able to be read as rebooting only those details in the 1937 edition concerning Bilbo, Gollum, and the ring, perhaps merely repeating all others. Likewise, while we have read *The Lord of the Rings* as retconning the 1937 edition of *The Hobbit* in toto, it seems able to be read as retconning only those details concerning Bilbo, Gollum, and the ring, perhaps expanding all others. Other combinations of repeating and revising diegetic details are possible too. One might object, therefore, that instead of only acknowledging revisionary kinds of *diegeses*, we must also acknowledge revisionary kinds of *diegetic details*. Perhaps readers do not only regard diegeses as revising each other in toto but also or instead regard diegetic details as revising other diegetic details.

Any detail can in isolation be regarded as revising or revised by any other detail or a diegesis in toto. Doing so however may damage the coherence of the respective diegesis.

Reading the 1951 edition of *The Hobbit* as rebooting only those details in the 1937 edition about Bilbo, Gollum, and the ring implies that only those details refer to different individuals, objects, and events. The same Gandalf then somehow invites different Bilbos on an adventure. It is difficult to understand this.

Because holding out against a reboot also involves different individuals, objects, and events, reading only those details in the 1937 edition concerning Bilbo, Gollum, and the ring as holding out against those in the 1951 edition again implies that only those details refer to different individuals, objects, and events. Again the same Gandalf invites different Bilbos on an adventure. It is again difficult to understand this.

Though retcons and expansions do not involve different individuals, objects, and events, only reinterpreting and expanding ones, holding out against isolated retconning and expanding details in *The Lord of the Rings* implies that only some individuals, objects, and events differ between discursively earlier and later diegeses generally. Because retconning and expanding details can always be held out against, countenancing diegetic-revisionary details rather than only diegeses in toto always allows for diegetic incoherence through unexplained selective doubling.

Because it is difficult to understand diegeses resulting from diegetic-revisionary details, we prefer regarding only diegeses in toto as diegetic-revisionary kinds.

Notes

1. Because linguistic properties may be physical, by 'purely physical' we mean capable of being expressed without remainder in the language of physics.
2. 'Discourse' is sometimes taken to refer to any unit of language longer than a sentence. It is often synonymous with 'text' but may also mean genre, as in

‘scientific discourse’ or ‘religious discourse’. Though discourses may involve such things as still images, film, three-dimensional objects, and live performance, we limit our analysis to prose text. Michel Foucault (1969/2002) uses ‘discourse’ narrowly to mean a way of speaking and broadly to mean a way of constituting a discipline or knowledge that encodes historical power structures.

3. See Linda Wetzel (2009) for how types relate to universals (xi–xiii) and for a defense of types (chapter 7).
4. Charles Sanders Peirce (1931–35, 4.537) introduced the type/token distinction with ‘the’.
5. In film theory, ‘diegesis’ refers to a film’s fictional world. In narratology, ‘diegesis’ refers to a sequence of events occurring within a fictional world, and ‘discourse’ refers to the telling of a diegesis.
6. Because reading is a mental as well as a linguistic act, diegeses are also mental objects.
7. Takashi Yagisawa observes that a story may be identified syntactically or semantically, the latter as “an ordered pair of a sequence of syntactic items and the corresponding contents they are mapped to” (2001, 168). In our terms the former treats the story as a diegesis qua syntactic and the latter as a diegesis qua semantic.
8. See also Johnston (1993). Other influential response-dependence theorists include Michael Smith (1989), Pettit (1996, chapter 2 and postscript; 2002, part I; 2005; Jackson and Pettit 2002), John McDowell (1998/2001, essays 6, 7, 10), and David Wiggins (1998, essays 3, 5). See Goldberg (2015, 34–40) for differences between Johnson’s and Wright’s views particularly, and Goldberg (2008, 469; 2011, 730–32; 2012b) for earlier discussion of response-dependence generally. The notion of a secondary quality traces to Galileo (1623/1957). See Jonathan Bennett (1971) for the primary-/secondary-quality distinction.
9. This is similar to Donald Davidson’s (2005, essay 7) view that every language user has her own language or idiolect. (See Goldberg 2009a; 2012a, 4; 2015, 93.) Further, on our view, no one reader necessarily reads the same discourse in precisely the same way twice. This is similar to Davidson’s related view concerning passing theories about what one’s utterances mean. It is expressed by Edmund Wilson’s remark: “But there is really no way of considering a book independently of one’s special sensations in reading it on a particular occasion. In this as in everything else one must allow for a certain relativity. In a sense, one can never read the book that the author originally wrote, and one can never read the same book twice” (Dabney 2007, 6). These “special sensations” and their resulting “relativity” account for a single discourse producing different diegeses for an author, other readers, and even a single reader over time. ‘When read’ in our analysis refers to the recollection of a discourse’s having been read. While all reading requires recollection to some degree, discourses that when read are constitutive of diegeses continue to be constitutive of them after having been read.
10. Because Lewis’s own possible worlds are maximally consistent state of affairs, elsewhere (Goldberg 2015, 201–02, 213, 247–48) one of us called them ‘logically possible worlds’, as contrasted with what were there called ‘subjectively empirical worlds’. The latter are those logically possible worlds in which subjects can learn every empirical property and whose empirical concepts and terms can in principle be applied to them.
11. Contemporary Meinongians include Terence Parsons (1980), Graham Priest (2005), and Edward Zalta (1983; 1988).

32 *There and Back Again*

12. See Goldberg (2015, 201) for Lewis's taking the usefulness of talk to entail the reality of referent.
13. Citations are to Douglas Anderson's *Annotated Hobbit* (Tolkien 2002), which tracks differences among editions.
14. Not all changes in discourses cause changes in diegeses. Changes in pagination may not, nor need changes in words if overall the discourse is still read as the same linguistic object. Can changes in diegeses cause changes in discourses? Strictly speaking, they cannot. A diegesis is a discourse when read. And reading a discourse does not change the discourse. (We set aside physical aspects of reading, e.g., turning pages, which might smudge symbols.) Consequently the resulting diegesis would not change a discourse nor would changes in resulting diegeses do so. Loosely speaking, changes in diegeses can cause changes in discourses. Changes in how a discourse is read can cause the author of the discourse to think that the discourse is read incorrectly because of some incorrect physical marking in it. If readers frequently read a discourse's word 'vagaries' as meaning ambiguities rather than unexpected changes, then the author might in subsequent editions change 'vagaries' to 'unexpected changes'. This however is not a change in the original discourse. It is a change to a different discourse, perhaps understood as a different edition. More generally, readers ignore typographical errors by replacing what they understand as incorrect discursive marks with different marks inferred from the diegesis. A sentence in Joyce Carol Oates's short story "The White Cat" appears in the 1994 edition: "Alissa laughed and said apologetically, 'Of course she likes you Julius,' as the car purred in her lap" (74). Readers likely replace "car" with "cat" because they understand the discursive marks "car" to reference the cat that has already been established in the diegesis.
15. Corey Olsen (2012, 38) appeals to "On Fairy-stories" to explain not the metaphysical but the pedagogical elements of *The Hobbit*.
16. Besides Gvaler and Goldberg (2019, chapter 5) and Goldberg and Gvaler (forthcoming), as we read him only Thomas Kuhn (discussed in Chapter 5) and those inspired by his idea of linking scientific revolutions to the promulgation of published works have. Even then the idea is largely left implicit and entirely concerned with discourses read as diegeses in scientific disciplines.
17. See, e.g., work by the authors (Gvaler and Goldberg 2016a; 2016b; 2017a; 2017b; 2017c; 2017d; 2017e; 2019; and Chavez, Gvaler, and Goldberg 2017).
18. Following Lewis's terminology, we might call the two Bilbos, Gollums, rings, and encounters each one's 'counterpart', where

[s]omething has for *counterparts* at a given world those things existing there that resemble it closely enough in important respects of intrinsic quality and extrinsic relations, and that resemble it no less closely than do other things existing there.

(Lewis 1973/2001, 40)

As we read the relevant discourses, the Bilbo in the 1937 edition of *The Hobbit* and the Bilbo in the 1951 resemble each other closely enough in intrinsic qualities of bravery, conviction, and fortitude, and extrinsic qualities of being visited by (a different) Gandalf who convinces him to join (different) dwarves on an (or a different) adventure, and each resembles the other no less closely than do other things existing in each one's world. We do not however follow Lewis's intent.

19. Olsen (2012) identifies the 1937 edition as the "Solo Stage" of *The Hobbit's* revision. He then identifies the 1951 edition the "Revision Stage,"

characterizing how the 1951 edition relates to the 1937 edition. “[T]he original version of the Gollum story and his cheerful willingness to give away the Ring,” exemplified by his leading Bilbo out of the tunnel intentionally, “was now utterly incompatible with the later story.” By the “later” story Olsen means *The Lord of the Rings*, which (as explained below), as expanding the 1951 edition, is compatible with the detail in the 1951 edition that Gollum leads Bilbo out of the tunnel unintentionally. So *The Hobbit*’s Solo Stage, i.e., the 1937 edition, is incompatible with both the 1951 edition and *The Lord of the Rings*. That is consistent with our analysis of a reboot.

20. As we read the relevant discourses, while the Bilbo in the 1937 edition of *The Hobbit* and the Bilbo in the 1951 edition are each one’s counterpart, the Bilbo in the 1937 edition and the Bilbo in *The Lord of the Rings* are identical. See note 18.
21. All mysteries rely on reinterpretation and revelation. If Sir Arthur Conan Doyle ordered details diegetically as he ordered sentences discursively, then *The Hound of the Baskervilles* would begin with a criminal’s committing a crime, followed by a detective’s searching for details already known to the reader, and end anti-climatically with the detective’s arriving at the same knowledge. Conan Doyle did not do so. He discursively saved for later sentences that when read are constitutive of diegetic details that occur earlier. He revealed later that Sir Charles Baskerville had been killed by his son rather than—as reading in discursive order suggests—a diabolical hound. By reinterpreting earlier details, Conan Doyle revealed that no such hound existed. Tolkien himself employed reinterpretation and revelation in *The Lord of the Rings* when he introduced Strider. Rather than a mere wanderer, Strider—Tolkien later revealed—was instead Aragorn son of Arathorn, the crownless who shall be king.
22. Tolkien’s (1995, 121, 161) explanation for the revision is consistent with ours. See Humphrey Carpenter (1997/2000, 188–89) for Tolkien’s account of how the ring became the link between *The Hobbit*—Carpenter does not distinguish editions—and *The Lord of the Rings*. See also Olsen (2012, 8–15).
23. Besides Gavalier and Goldberg (2019, chapter 5) and Goldberg and Gavalier (forthcoming), only Andrew McGonigal (2013) and Ben Caplan (2014) do so directly. Graham McFee (1992) discusses “retroactivism,” interpreting either an earlier or later work of art given new information, though McFee focuses on paintings and thematically unrelated prose novels. Nicholas Wolterstorff (1980) discusses “extrapolation,” “the activity of determining what is included in the projected world beyond what the author indicated” (116), a process distinct from retconning because it does not include reinterpretation. See Andrew Friedenthal (2017) for an analysis of retcons from the perspective of mass media.
24. E. Frank Tupper in his study of Wolfhart Pannenberg (1968) asks: “Did Jesus become the Son of God at some point in his history, or conversely, was he the Son of God from the beginning?” (1973, 169). Pannenberg asserts that his divinity as Christ “comes into force retroactively from the perspective of the [Easter] event” (qtd. in Tupper 170). Tupper clarifies that though “a continuity of the pre-Easter Jesus with the exalted Lord is perceived,” the resurrection’s “retroactive power” establishes his divine identity (169, 170). Pannenberg had already argued that the New Testament retcons Jesus—now Christ—into the God of Israel: “the Old Testament idea of God became something preliminary” because “in the view of Jesus everything previously thought about God appeared in a new light” (qtd. in Tupper 168). Though Tupper coins the term ‘retroactive continuity’, he attributes the concept to Pannenberg. Pannenberg (1970) described “the backward-reaching

- incorporation of the contingently new into what has been” (qtd. in Tupper 99). Tupper concludes: “Pannenberg’s conception of retroactive continuity ultimately means that history flows fundamentally from the future into the past, that the future is not basically a product of the past” (100). In Chapter 7 we discuss a different retconning by the New Testament.
25. Peter van Inwagen (1977) provides Mr. Pickwick of Charles Dickinson’s *The Pickwick Papers* as an example of what he terms an ‘incomplete object’ because Pickwick “neither has nor lacks the property of having an even number hairs on his head” (300). Regarding how many children Lady Macbeth had, Wolterstorff (1980) answers “*exactly n children* (*n* being equal to or greater than 0)” (132), terming the possible world of *Macbeth* ‘non-comprehensive’ because there are states of affairs that it neither requires nor prohibits.
 26. As we read the relevant discourses, the Bilbo in the 1951 edition of *The Hobbit* and the Bilbo in *The Lord of the Rings* are identical with each other, just as the Bilbo in the 1937 edition and the Bilbo in *The Lord of the Rings* are identical with each other. Not unless the 1951 edition is read as reconstructing how *The Lord of the Rings* retcons the 1937 edition is the Bilbo in the former two diegeses identical with the Bilbo in the latter two.
 27. Olsen identifies the 1937 edition of *The Hobbit* and the 1951 edition as revised by *The Lord of the Rings* as *The Hobbit*’s “Assimilation Stage,” running together *The Lord of the Rings*’s retconning the 1937 edition and expanding the 1951 edition. In the Assimilation Stage, “Tolkien brings the story of *The Hobbit*, retroactively, to fit within the newer story [*The Lord of the Rings*]. . . . Tolkien had already revised *The Hobbit* to change the one element in it that could not be reconciled at all to the later story, and he now, through his new story, expanded on and revised many of the points” (12). By “the story of *The Hobbit*” Olsen means the 1937 edition, and by the “revised *The Hobbit*” the 1951 edition. *The Lord of the Rings* retroactively fits the earlier edition, which the later edition had previously rebooted. After the retcon, *The Lord of the Rings* expanded on the earlier and the later editions, since they now all referred to the same Middle-earth. As explained below, Olsen holds out against the Assimilation Stage.
 28. There are even conferences of such holdouts, with one held at the Institute of Philosophy at the Catholic University of Leuven, in Belgium, on 12–13 December 2016, focusing on the deduction of the categories in the A edition.
 29. Both editions of the First *Critique* are Kant (1787/1998), while the Second *Critique* is Kant (1788/2002) and the Third *Critique* is Kant (1790/2000). The *Groundwork* is Kant (1785/2002).
 30. Each holdout, like the reboot (see note 18), involves two different Bilbos, each the other’s counterpart.
 31. Nonetheless, as explained in Chapter 5, as we understand it, Thomas Kuhn’s analysis of the history of scientific development does not.
 32. Comparing holdouts to their rejected diegetic revision, and particularly the second and third characteristics of each, further illuminates them. Though reboots and holdouts both involve allusions, because holdouts reject what would be the rebooting diegesis they reject its world. The world in which Bilbo is led out of the tunnel by Gollum unintentionally is rejected in favor of the world in which Bilbo is led out of the tunnel by Gollum intentionally. Accepting the reboot’s (3) permits them nevertheless to modify the reboot’s (2). Further, because holdouts reject what would be the reinterpretation of details, they threaten to leave the discursively earlier and discursively later diegeses contradictory. Bilbo both is led out of the tunnel by Gollum intentionally and is led out of the tunnel by Gollum unintentionally. Yet, because

holdouts reject the discursively later diegesis, they again reject the world to which it refers. Denying the retcon's (3) involves denying its (2). There are two worlds, and so two Bilbos and Gollums, and no contradiction arises. Finally, because holdouts reject what would be the expansion of details, they also threaten to leave the discursively earlier and discursively later diegeses contradictory. Bilbo both does not encounter Frodo, who is on a quest to destroy the ring, and does encounter him. Here too, however, because holdouts reject the discursively later diegesis, they reject the world to which it refers. Denying the expansion's (3) again involves denying its (2). There are again two worlds, and so two Bilbos, and no contradiction arises. Holdouts against reboots would not be holdouts *against* them were the world to which the rejected diegeses refers not rejected. Holdouts against retcons and expansions would involve contradictions were two worlds, one of which is rejected, involved rather than one.

33. Tolkien engaged in three further instances of diegetic revision. First, Tolkien published a third edition of *The Hobbit* in 1966. Less revisionary than the 1951 edition, the 1966 edition revised sentence structure and nomenclature. Readers, including Tolkien, may read the 1966 edition as rebooting the 1937 edition and retconning the 1951 edition. We follow Olsen (2012) in ignoring it as insubstantially distinct from the 1951 edition. (Two further editions of *The Hobbit* have been published since Tolkien's death, but their canonicity is questionable.) Second, in 1948, Tolkien wrote "Of the Rings of Power and the Third Age," which Christopher Tolkien published in 1977 as the final part of *The Silmarillion*. Because "Of the Rings of Power and the Third Age" retells the 1951 edition from the perspective of the elves, readers may read it as rebooting the 1937 edition and expanding the 1951 edition and *The Lord of the Rings*. And third, in 1953 Tolkien wrote "The Quest of Erebor," which Christopher published in *Unfinished Tales* in 1980. Because "The Quest of Erebor" retells the 1951 edition of *The Hobbit* from the perspective of Gandalf, readers may likewise read it as rebooting the 1937 edition and expanding the 1951 edition and *The Lord of the Rings*. (See J.R.R. Tolkien's [1983–96] 12-volume *Histories of Middle-earth*, edited by Christopher, for earlier and later discourses read as versions of those published during Tolkien's life.)
34. As we read the relevant discourses, there would then be only one Bilbo overall. See note 26.
35. Peirce names the view (1931–35, 1.13) See also Peirce (1.120 and 1.149).
36. Quine would reject retcons as we understand them because he would reject the semantic account explaining them. See Chapter 2.

2 Semantic Dualism

The 1937 edition of *The Hobbit* can be read as rebooted by the 1951 edition and retconned by *The Lord of the Rings*, and the 1951 edition can be read as expanded by *The Lord of the Rings*. Readers might hold out against any of these instances of diegetic revision. Following Tolkien's own revisionary practices, in the previous chapter we traced the history of discourses read as diegeses concerning Bilbo Baggins—or “the history of Bilbo's diegetic revision.” While we leave literary criticism to analyze Tolkien's fiction per se, the philosophy of language has much to say about the semantic complexities of this history, permitting one to engage in “the philosophy of the history of Bilbo's diegetic religion.”

Philosophers however have almost uniformly ignored such complexities. This is quadruply surprising. First, as explained here, philosophers have at their disposal semantic accounts consisting of theories of reference and meaning (or linguistic content or cognitive significance—we take these to amount to the same) of proper names that explain the diegetic logic of reboots, retcons, expansions, and holdouts. Those theories do so by explaining how each diegetic revision functions. (As explained in the previous chapter, because reconstructions result from reboots or retcons, whichever semantic account explains the revision explains the diegetic logic of the reconstruction.) Second, as explained in the subsequent chapter, reboots, retcons, expansions, and holdouts, as well as their semantics, raise myriad metaphysical issues that philosophers are specifically qualified to sort out. Third, as explained in the chapters that follow, everything so far considered has analogues in works of fact and religious scriptures. And fourth, and most significantly for the philosophy of language particularly, the semantic accounts that we consider have been previously construed as competitors. This chapter establishes the unique result that neither can by itself function as a complete account of proper names. Rather they are complimentary.

The Semantic Triangle

In *De Interpretatione*, his masterwork on thought, language, and logic, Aristotle writes:

Now spoken sounds are symbols of affections in the soul, and written marks symbols of spoken sounds. And just as written marks are not the same for all men, neither are spoken sounds. But what these are in the first place signs of—affections of the soul—are the same for all; and what these affections are likeness of—actual things—are also the same.

(16^a3–8)

Whether or not Aristotle is right, he seems to be saying that spoken sounds and written marks are symbols. The latter are symbols of the former, insofar as writing symbolizes speech. But spoken sounds are symbols too because speech symbolizes “affections in the soul,” i.e., mental states or thoughts. Speech and writing are not the same for all human beings. They differ depending on language. Yet, Aristotle maintains, thoughts are the same for all, as are the things that thoughts are like, viz., “actual things,” to which language and thought refer. While in paradigmatic cases these actual things are concrete objects, Aristotle thinks that we can speak and write, and think, about non-spatiotemporal, or abstract, objects too.

We agree that this section from *De Interpretatione* “may be the single most important passage in the history of Western philosophy of language” (Cameron and Stainton 2015, 5). Aristotle presents a semantic triangle with angles of language (spoken and written), thought, and things. Working out that triangle has implicitly or explicitly motivated the philosophy of language for millennia. We consider two schools of examples applicable to our analysis of revisionary practices. These schools have been previously construed as competitors because members of each have maintained that their account applies in all contexts. As we argue, each account applies only in some. Rather than competition there is complementarity.

Descriptivism and Reboots

Aristotle himself apparently held that spoken words relate directly to thoughts because they symbolize them. Thoughts in turn relate directly to objects because they resemble them. For Aristotle, therefore, language relates to thoughts directly and to objects indirectly. Aristotle was not the first nor the last philosopher to hold this. Plato maintained in the *Cratylus* that names for persons and things are correct insofar as they reflect what we think about the persons and things to which they refer.¹ In the early-modern era John Locke in the *Essay Concerning Human Understanding* (1689/1979, III.ii.2–3, III.vi) argued that names for substances, such as ‘gold’, refer to objects in virtue of the empirical ideas associated with them, such as yellow and metal.²

The first working out of Aristotle’s triangle in the analytic tradition was Friedrich Ludwig Gottlob Frege’s (1892/2008). According to Frege, a proper name, such as ‘Bilbo’, can have both a sense and a referent. A

sense is its “mode of presentation” (143) or how one conceives of the object named. As a mode of presentation or conception, a sense can be the content of a thought. A referent is the object (if any) that the name denotes or picks out. And a proper name denotes its referent (if any) through the mediation of its sense. Further, Frege added, a referent can have more than one sense, as with the single object associated with the two senses *BILBO’S RING* and *THE ONE RING*. Likewise, a sense can lack a referent, as would an object associated with the sense *GANDALF’S ONE RING*. Limiting ourselves to senses that have referents, Frege’s take on Aristotle’s triangle is therefore that proper names (language) relate to senses (the content of thoughts) directly and to referents (objects) indirectly. ‘Bilbo’ is directly associated with senses such as *THE HOBBIT WHO FINDS THE ONE RING*, and through the mediation of those senses ‘Bilbo’ indirectly refers to Bilbo.³

Frege’s work became known to the larger philosophical community by Rudolf Carnap, Ludwig Wittgenstein, and especially Bertrand Russell, who varied Frege’s view. For Russell (1905/2008; 1911/1986; 1912/1997, chapter 5; 1918/2009), other than for what he took as proper names in a logically narrow sense, i.e., ‘this’ and ‘that’ and their plurals, the meaning of a proper name is the descriptions associated with it. Such names in turn “are really abbreviations for descriptions” (1918/2009, 29). A description, like a sense, can be the content of a thought. But a description is also a linguistic object. A description can itself be definite, starting with the definite article and so describing something uniquely, or indefinite, starting with the indefinite article and so not. ‘The hobbit who finds the One Ring’ is definite, while ‘a hobbit who lives in a hole in the ground’ is indefinite. According to Russell, the meaning of a proper name is the set of definite descriptions associated with it. ‘Bilbo’ means ‘the hobbit who finds the One Ring’ and other definite descriptions associated with the name. A referent, or “denotation,” is the object (if any) that the name denotes. Similar to Frege’s theory, names denote indirectly, here through the mediation of their descriptions. ‘Bilbo’ denotes (or refers to) Bilbo, i.e., the object described as ‘the hobbit who finds the One Ring’. Again similar to Frege’s theory, a referent can have more than one description, and a description can lack a referent. For descriptions that have referents, Russell’s take on Aristotle’s triangle roughly parallels Frege’s. Proper names relate to descriptions directly and to referents indirectly. ‘Bilbo’ is directly associated with descriptions such as ‘the hobbit who finds the One Ring’, and through the mediation of those descriptions ‘Bilbo’ indirectly refers to Bilbo.

Russell argued that descriptions permit maintaining bivalent logic (1905/2008), evaluating the truth of sentences about non-existent objects (1905/2008), and explaining how knowledge of things with which we are not directly acquainted is possible (1911/1986; 1912/1997, chapter 5). Willard van Orman Quine (1948/2006) adopted Russell’s theory to explain how negative existential sentences can be meaningful and to offer

a criterion of ontological commitment. Others, including especially John Searle (1958/2008) and Graeme Forbes (1990), have modified Frege's and Russell's ideas further. Recognizing that Frege could himself understand descriptions as expressing senses, we concentrate on the common core of what all these theories say about reference and meaning:

- (a) **Reference:** A proper name refers indirectly to its referent through the mediation of its associated descriptions.⁴
- (b) **Meaning:** The meaning of a proper name is exhausted by its associated descriptions.⁵

Call that view 'descriptivism'. In the next chapter we consider a species of descriptivism with a causal element. We also consider how descriptivism relates to fictional names. The heart of descriptivism however is that reference and meaning are distinct. Moreover, because sameness of referent may not survive changing descriptions, descriptivism is not essentialist about reference. Descriptivism may or may not be true, and if not true may or may not be revisable into an account that is. Neither is our concern. Our claim about descriptivism is not categorical but hypothetical. *If* descriptivism is true, *then* it explains the diegetic logic of reboots. We shorten this by saying that descriptivism explains the diegetic logic of reboots, though we always keep the conditional in mind.

Descriptivism was introduced primarily as a way of making sense of factual names, such as 'Tolkien', rather than fictional ones, such as 'Bilbo'. Later we consider objections about its ability to understand either. Here we assume that it does because reconsidering Tolkien's rebooting of Bilbo illuminates our present point. In the 1937 edition of *The Hobbit*, 'Bilbo' is associated with 'the hobbit playing the riddle-game with an honest Gollum', 'the hobbit with whom Gollum played the game and to whom Gollum apologized', and 'the hobbit led out of the tunnel by Gollum intentionally'. In the 1951 edition, 'Bilbo' is instead associated with 'the hobbit playing the riddle-game with a dishonest Gollum', 'the hobbit with whom Gollum played the game but to whom Gollum did not apologize', and 'the hobbit led out of the tunnel by Gollum unintentionally'. These descriptions contradict each other. Further, Tolkien's changing the descriptions associated with 'Bilbo' (and other proper names) causes the 1951 edition to reboot the 1937 edition.

The 1951 edition of *The Hobbit* satisfies the necessary and sufficient conditions for rebooting the 1937 edition:

- (1) The 1937 edition is a discursively earlier diegesis constituted when an earlier discourse is read. The 1951 edition is a discursively later diegesis constituted when a later discourse is read.
- (2) The 1937 and 1951 edition refer to different worlds, the former of which is rejected.

- (3) The 1951 edition alludes to details from the 1937 edition in such a way that a reader experiences those details—including about Bilbo and Gollum, the ring, and their encounter—as having previously occurred.
- (4) Despite the 1951 edition's being allusive, because the 1937 and 1951 editions refer to different worlds, Bilbo in the 1951 edition's world cannot himself be led out the tunnel intentionally by the Gollum in the 1937 edition's world, nor can he be aware of any allusions to this earlier Gollum's doing so for the earlier Bilbo.

Descriptivism explains the diegetic logic behind this. (1) identifies the 1937 edition as the rebooted diegesis and 1951 edition as the rebooting diegesis. (2) is true because 'Bilbo' and the other proper names in each edition refer to a different Bilbo and other individuals in different Middle-earths, the former of which is rejected. That difference in reference is explained by the difference in associated descriptions that contradict. The 1951 edition refers to a different world *because* its proper names for individuals, objects, and events are associated with contradictory descriptions. They cannot and so do not refer to the same individuals, objects, and events in the same world. Those associated descriptions also express the meaning of those proper names. 'Bilbo' in the 1937 edition means (inter alia) 'the hobbit led out of the tunnel by Gollum intentionally', while 'Bilbo' in the 1951 edition means (inter alia) 'the hobbit led out of the tunnel by Gollum unintentionally'. Nonetheless (3) the 1951 edition still alludes to details from the 1937 in such a way that a reader experiences them as repetitions. Someone reading in the 1951 edition that in the hole in the ground there lived a hobbit who previously had read the 1937 edition would be reminded of the earlier edition. (4) regardless of the allusion, for the reader, changing the descriptions replaces the world. From the perspective of the later edition, that earlier edition never existed. That is why Bilbo in the 1951 edition can neither be led out of the tunnel intentionally by Gollum in the 1937 edition nor be aware of any allusions to this earlier Gollum's doing so to the earlier Bilbo.

Referentialism and Retcons

Descriptivism is one way to connect the angles of Aristotle's semantic triangle. Language relates to thoughts directly and to objects indirectly. Another way to connect them is for language to relate to objects directly without the mediation of thoughts. Historically Thomas Reid (1785/1997, I.1., IV.1.) apparently held this view when maintaining that, while words express thoughts, the meaning of words is the objects that those words signify.⁶ John Stuart Mill (1843/2001, bk. I) definitely held this view when he maintained that the proper names "denote," or refer to, objects directly.⁷ More recently two analytic philosophers, Saul

Kripke (1970/2005; 1973/2012) and Hilary Putnam (1973/2008), proposed what has been collectively called the “new theory of reference”—new as distinct from Mill’s old.

Though Frege and Russell, among the founders of the analytic tradition, were descriptivists, most contemporary analytic philosophers follow Kripke and Putnam. One of Kripke’s aims was to attack descriptivism. He appealed to thought experiments meant to divide epistemological considerations concerning thoughts from metaphysical considerations concerning objects. For Kripke, the meaning of factual (1970/2005) as well as fictional (1973/2012) proper names is the objects to which they refer independent of how we think about those objects—and so independent of senses, descriptions, or other mediations. ‘Bilbo’ refers directly to and means Bilbo, regardless of how conceived, described, or otherwise thought.⁸ Though Putnam did not offer an account of fictional names, one of Putnam’s aims was to demonstrate that “‘meaning’ just ain’t in the *head*” (1973/2008, 309). The meaning of natural-kind terms particularly depends not on one’s psychological state or any correlated senses but on one’s physical environment. The same applies to proper names, and the same about all these terms applies whether expressed in language to others or in thought to oneself.⁹

There have been many attempts to defend and to expand Kripke’s and Putnam’s views. Scott Soames’s (2003) is a particularly systematic one, while Fred Dretske (1981/1999) proposes a related reliabilist variant. We again concentrate on the common core of what these theories say about reference and meaning:

- (a) **Reference:** A proper name refers directly to its referent without the mediation of its associated descriptions.
- (b) **Meaning:** The meaning of a proper name is exhausted by its referent and so independent of its associated descriptions.

Call that view ‘referentialism’.¹⁰ In the next chapter we consider a species of referentialism with a causal element as well as how referentialism relates to fictional names. The heart of referentialism however is that reference and meaning are the same. Moreover, because sameness of referent survives changing descriptions, referentialism is essentialist about reference. As with descriptivism, referentialism may or may not be true, and if not true may or may not be revisable into an account that is. Our claim about referentialism is not categorical but hypothetical. *If* referentialism is true, *then* it explains the diegetic logic of retcons. We shorten this by saying that referentialism explains the diegetic logic of retcons, keeping the conditional in mind.

Like descriptivism, referentialism was introduced primarily as a way of making sense of factual rather than fictional names. Later we consider objections about its ability to understand either. Reconsidering

Tolkien's retconning of Bilbo here illuminates our present point. In the 1937 edition of *The Hobbit*, 'Bilbo' is associated with 'the hobbit playing the riddle-game with an honest Gollum', 'the hobbit with whom Gollum played the game and to whom Gollum apologized', and 'the hobbit led out of the tunnel by Gollum intentionally'. In *The Lord of the Rings*, 'Bilbo' is instead associated with 'the hobbit playing the riddle-game with a dishonest Gollum', 'the hobbit with whom Gollum played the game but to whom Gollum did not apologize', and 'the hobbit led out of the tunnel by Gollum unintentionally'. These descriptions again contradict each other. Yet in *The Lord of the Rings* we learn that the account given in the 1937 edition of *The Hobbit* is incorrect. Bilbo lied. Moreover, though the descriptions associated with 'Bilbo' in the 1937 edition are incorrect, after the retconning 'Bilbo' in the 1937 edition of *The Hobbit* and 'Bilbo' in *The Lord of the Rings* refer to and mean the same Bilbo. Hence those earlier descriptions are not making a separate semantic contribution to the referent and meaning of 'Bilbo'. Were they to make such a contribution, then 'Bilbo' in the 1937 edition would not refer to the same individual as 'Bilbo' in *The Lord of the Rings*.

Put differently, when in *The Lord of the Rings* we read Tolkien as explaining that Bilbo lied, this gives us license semantically to ignore the descriptions associated with 'Bilbo' in the 1937 edition of *The Hobbit* in determining the term's reference and meaning. Bilbo is described incorrectly in the 1937 edition, yet 'Bilbo' still refers to and means Bilbo. Admittedly, in both the 1937 edition and *The Lord of the Rings* readers care about how he is described. That is why they may be upset that Bilbo lied. We are not given license psychologically to ignore the descriptions. They matter regarding how we feel about Bilbo. They just do not matter regarding the reference and meaning of his name. Nor need referentialism rely on an individual's lying. Any diegetic detail that gives us license semantically to ignore descriptions of individuals, objects, or events in favor of those individuals, objects, or events themselves suffices. Further, Tolkien's identifying the meaning of 'Bilbo' with its referent independent of how that referent is described causes *The Lord of the Rings* to retcon the 1937 edition.

The Lord of the Rings satisfies the necessary and sufficient conditions of retconning the 1937 edition of *The Hobbit*:

- (1) The 1937 edition is a discursively earlier diegesis constituted when an earlier discourse is read. *The Lord of the Rings* is a discursively later diegesis constituted when a later discourse is read.
- (2) The 1937 edition and *The Lord of the Rings* refer to the same world, which remains accepted.
- (3) *The Lord of the Rings* reinterprets details from the 1937 edition in such a way that a reader takes those details as having been previously incorrect.

- (4) Because the 1937 edition and *The Lord of the Rings* refer to the same world, Gandalf, Frodo, and Samwise in *The Lord of the Rings* can know that the version of Bilbo's encounter with Gollum in the 1937 was based on lies that Bilbo told while under the influence of the ring.

Referentialism explains the diegetic logic behind this. (1) identifies the 1937 edition of *The Hobbit* as the retconned diegesis and *The Lord of the Rings* as the retconning diegesis. (2) is true because 'Bilbo' in each edition refers to the same Bilbo and other individuals in the same Middle-earth, which remains accepted. The sameness of referent is explained by the semantic irrelevance of the difference in the associated descriptions. *The Lord of the Rings* refers to the same world *because* its proper names for individuals, objects, and events do not refer through the mediation of those descriptions. Nor is it problematic that the descriptions would contradict were they not reinterpreted. In each case those associated descriptions do not express the meaning of those proper names. Their referents do. 'Bilbo' in the 1937 edition and 'Bilbo' in *The Lord of the Rings* refer directly to and mean the same Bilbo because their different descriptions are referentially irrelevant. Neither is it the case that the reinterpretation of those descriptions itself permits them to refer to or express the meaning of 'Bilbo'. Those reading the 1937 edition before reading *The Lord of the Rings* are not aware of the reinterpretation. Yet when they read *The Lord of the Rings* they come to realize that those earlier descriptions are incorrect and so determine neither reference nor meaning. Nonetheless (3) those descriptions are not entirely irrelevant. Though there is only one Bilbo, readers do learn that earlier descriptions associated with Bilbo had been incorrect. Not only did Gollum lead Bilbo out of the tunnel unintentionally but Bilbo also claimed otherwise because he lied. (4) that is because, for the reader, changing the descriptions reveals things about the world. Frodo can himself learn in *The Lord of the Rings* that Bilbo lied in the 1937 edition. Frodo never thinks that there are two Bilbos, one led out of the tunnel intentionally, the other intentionally. We and Frodo both know that, no matter how described, Bilbo is Bilbo.

Referentialism and Descriptivism, and Expansions

So far we have shown that descriptivism explains the diegetic logic of reboots and that referentialism explains the diegetic logic of retcons. We can further appreciate that descriptivism *cannot* explain the diegetic logic of retcons for the same reason that it *does* explain the diegetic logic of reboots, as evidenced by reboot's (2). This (2) would in the case of retcons be false because 'Bilbo' and other proper names in the 1937 edition of *The Hobbit* and *The Lord of the Rings* do not refer to a different Bilbo and other individuals in different Middle-earths, the former of which is rejected. Likewise, referentialism *cannot* explain the diegetic logic of

reboots for the same reason that it *does* explain the diegetic logic of retcons, as evidenced by retcon's (2). That (2) would in the case of reboots be false because 'Bilbo' and other proper names in the 1937 edition and the 1951 edition do not refer to the same Bilbo and same individuals in the same Middle-earth, which remains accepted. Put differently, descriptivism cannot explain the diegetic logic of retcons because according to it reference may not survive changing descriptions when retcons require that it does. Referentialism cannot explain the diegetic logic of reboots because according to it referents need to survive changing descriptions when reboots require that it may not.

Besides rebooting and retconning, Tolkien also engaged in expanding. The diegetic revision from the 1951 edition of *The Hobbit* to *The Lord of the Rings* satisfies the necessary and sufficient conditions of:

- (1) The 1951 edition is a discursively earlier diegesis constituted when an earlier discourse is read. The 1954–55 *The Lord of the Rings* is a discursively later diegesis constituted when a later discourse is read.
- (2) *The Lord of the Rings* and the 1951 edition refer to the same world, which remains accepted.
- (3) *The Lord of the Rings* contains details continuing those from the 1951 edition in such a way that a reader experiences those details as having experiences those details as having been previously incomplete.
- (4) Because the 1951 edition and *The Lord of the Rings* refer to the same world, individuals, objects, and events in each diegesis can interact. Gandalf, Frodo, and Samwise can know that the ring that Bilbo found in the 1951 edition is the ring that he gave to Frodo in *The Lord of the Rings*.

While descriptivism explains and referentialism cannot explain the diegetic logic of reboots, and referentialism explains and descriptivism cannot explain the diegetic logic of retcons, both semantic accounts explain the diegetic logic of expansions. (1) identifies the 1951 edition as the expanded diegesis and *The Lord of the Rings* as the expanding diegesis. (2) is true because of two things. On the one hand, the 1951 edition and *The Lord of the Rings* refer to the same world *because* their proper names for individuals, objects, and events are associated with descriptions that, rather than being contradictory, are cumulatively informative. More details are provided about the world. 'Bilbo' in the 1951 edition means (inter alia) 'the hobbit playing the riddle-game with a dishonest Gollum', while in addition to this 'Bilbo' in *The Lord of the Rings* means (inter alia) 'the hobbit whose heir is Frodo'. On the other hand, the 1951 edition and *The Lord of the Rings* refer to the same world *because* those names refer to and mean their objects directly. The details that are provided about the same individuals, objects, and events in the same world are semantically irrelevant. 'Bilbo' in the 1951 edition means

Bilbo, and ‘Bilbo’ in *The Lord of the Rings* means Bilbo also. Reference is itself sufficient. Hence, because expansions can use ‘Bilbo’ to refer to and mean both its associated descriptions and the same individual directly, descriptions can be taken as both semantically relevant, as per descriptivism, and semantically irrelevant, as per referentialism. Nonetheless (3), whether or not those descriptions are semantically relevant, readers learn that earlier descriptions associated with Bilbo had been incomplete. When Gandalf in the 1951 edition invites Bilbo on an adventure, Gandalf sets into motion events resulting in Frodo’s going on his own, more perilous adventure in *The Lord of the Rings*. (4) happens regardless because on both possibilities the 1951 edition and *The Lord of the Rings* refer to the same world, readers acquire new information about that world from each, and individuals, objects, and events in them can interact.

Descriptivism and Holdouts

There might also be holdouts who for historical, aesthetic, or other reasons reject a rebooting, retconning, or expanding diegesis. Applied to our cases that would amount to these:

- (i) Instead of reading the 1937 edition as having been rebooted by the 1951 edition, the holdout rejects the discursively later diegesis and reads the discursively earlier one as complete, isolated, and definitive.
- (ii) Instead of reading the 1937 edition as having been retconned by *The Lord of the Rings*, the holdout rejects the discursively later diegesis and reads the discursively earlier one as complete, isolated, and definitive.
- (iii) Instead of reading the 1951 edition as having been expanded by *The Lord of the Rings*, the holdout rejects the discursively later diegesis and reads the discursively earlier one as complete, isolated, and definitive.

Each satisfies the pattern of a holdout, which we combine:

- (1) The 1937 edition and the 1951 edition are each a discursively earlier diegesis constituted when an earlier discourse is read. The 1951 edition and *The Lord of the Rings* are each a discursively later diegesis constituted when a later discourse is read.
- (2) The first and second of each pair—the 1937 and 1951 editions, the 1937 edition and *The Lord of the Rings*, and the 1951 edition and *The Lord of the Rings*—refer to different worlds, the latter of which is rejected.
- (3) The 1951 edition alludes to details from the 1937 edition, *The Lord of the Rings* alludes to details from the 1937 edition, and *The Lord of the Rings* alludes to details from the 1951 edition, respectively, in

such a way that a reader experiences those details as having previously occurred.

- (4) Despite being allusive, because the discursively earlier diegesis and discursively later diegesis refer to different worlds, individuals, objects, and events in the world to which the former refers, and those in the world to which the latter refers, cannot interact. Nor can individuals from the former world be aware of any allusions to the latter world.

Descriptivism explains the diegetic logic of each of these holdouts. Because (1), (3), and (4) are similar to what we have already explained, especially regarding holdouts, we limit our discussion to (2).

In (i) the holdout takes the different descriptions associated with ‘Bilbo’ to entail that the name refers indirectly to and means different Bilbos in different worlds. ‘Bilbo’ is associated with ‘the hobbit led out of the tunnel by Gollum intentionally’ in the holdout diegesis and ‘the hobbit led out of the tunnel by Gollum unintentionally’ in the rejected diegesis. The mediation of those descriptions determines that the individual and with it his world differ. Descriptivism explains the diegetic logic of Tolkien’s own rebooting of the 1937 edition with the 1951 edition. Instead of Tolkien’s desire to replace the 1937 with the 1951 world, however, the holdout rejects the 1951 world.

In (ii) the holdout likewise takes the different descriptions associated with ‘Bilbo’ to entail that the name refers indirectly to and means different Bilbos in different worlds. ‘Bilbo’ is associated with ‘the hobbit led out of the tunnel by Gollum intentionally’ in the holdout diegesis and ‘the hobbit led out of the tunnel by Gollum unintentionally’ in the rejected diegesis, and the mediation of those descriptions again determines that the individuals and with it their worlds differ. Referentialism explains the diegetic logic of Tolkien’s own retconning of the 1937 edition of *The Hobbit* with *The Lord of the Rings*. Though the descriptions associated with ‘Bilbo’ differed between the diegeses, for him, they are semantically irrelevant. Regardless of what descriptions are associated with ‘Bilbo’, the name refers directly to and mean Bilbo, the one and only. The holdout denies this. She instead takes those differing descriptions to entail that that name refers indirectly to and means different Bilbos in different Middle-earths, the latter of which she rejects.

And in (iii) the holdout again takes different descriptions associated with ‘Bilbo’ to entail that the name refers to and means different Bilbos in different worlds. ‘Bilbo’ is associated with ‘the hobbit playing the riddle-game with a dishonest Gollum’ in the holdout diegesis and ‘the hobbit whose heir is Frodo’ in the rejected diegesis. Because the descriptions associated with ‘Bilbo’ are not contradictory, Tolkien could permit their still referring to and meaning the same individual in the same world. He could also permit each name’s being understood as referring directly to and meaning the same individual in the same world. So referentialism or

descriptivism explains its diegetic logic. The holdout however requires descriptivism alone. She denies that some descriptions from the rejected diegesis apply to proper names from the holdout diegesis. ‘The hobbit whose heir is Frodo’ does not, according to the holdout, apply to ‘Bilbo’. She again takes differing descriptions, which she reads as contradictory, as entailing that the name refers indirectly to and means different Bilbos in different Middle-earths, the latter of which she rejects.

Finally, just as referentialism cannot explain the diegetic logic of reboots, it cannot explain the diegetic logic of holdouts either and for the same reason. According to referentialism, referents need to survive changing descriptions, when holdouts require that they may not.

Semantic Dualism

We have established that neither descriptivism nor referentialism by itself explains the logic of all diegetic revision. Call that view ‘semantic dualism’. Semantic dualism is apparently a new view. That is because proponents of descriptivism and referentialism take their view to apply to proper names in all contexts. Proponents of semantic dualism do not. But how exactly should we understand this dualism?

Dualisms generally come in different types. Two are relevant to semantic dualism—the first because it is the type of dualism that semantic dualism is not, the second because it is the type of dualism that semantic dualism is. The first type of dualism is conjunctive. Two phenomena function together. Paradigmatically, according to René Descartes (1641/1999), mind and body are separate substances. His substance dualism is conjunctive because mind and body are, as he says, “joined” (48, 51, 53) and “commingled” (53). A second type of dualism is disjunctive. One phenomenon functions in one of two ways depending on context. Paradigmatically, according to Benedict Spinoza’s (1677/2000), there is only one substance, which conceived under the attribute of Thought is God, while conceived under the attribute of Extension is Nature. His attribute dualism is disjunctive because his one substance is, as he says, “God or Nature” (226, 231).

Semantic dualism is a dualism of the second, disjunctive type. When the 1937 edition of *The Hobbit* is read as rebooted by the 1951 edition, descriptivism applies to ‘Bilbo’ in each. When the 1937 edition is read as retconned by *The Lord of the Rings*, referentialism applies to ‘Bilbo’ in each. Hence descriptivism or referentialism applies to ‘Bilbo’ in the 1937 edition itself depending on context, here on the kind of revision in which it is involved. Unlike Spinoza’s dualism (and Donnellan’s, considered momentarily), however, this disjunctive dualism is inclusive: at least one of descriptivism or referentialism applies. When the 1951 edition is read as expanded by *The Lord of the Rings*, descriptivism and referentialism apply to ‘Bilbo’ in each.

We are not suggesting that semantic dualism be a general view about the reference and meaning of proper names. There are reasons independent of explaining the diegetic logic of revision to endorse descriptivism, referentialism, both, or perhaps some other account as such a general view. The explosion of philosophical work on proper names since Kripke (if not Russell) attests to that. Descriptivism and referentialism specifically have each been repeatedly championed and attacked. As Mark Sainsbury observes:

The history of the theories of names is dominated by oscillations between Fregean [our descriptivist] and Millians [our referentialist] poles. Both poles have attractions. The [descriptivist] pole promises explanations of how names can be learned and used, how there can be differences of cognitive value and informative identity sentences, how submission of coreferring names may fail to preserve truth, and how sentences which seem to deny the existence of something can be true. The [referentialist] pole does justice to the intuition that names pick things out without attributing information, that they are used in populations which do not share significant information about their bearers, and that they designate rigidly.

(2005, 44)

While we may differ with Sainsbury on some of these details, we agree with his overall point. We leave it to Sainsbury and others to work out whether in non-diegetic-revisionary cases descriptivism, referentialism, both, or neither is correct. Our claim is merely that neither descriptivism nor referentialism can by itself explain the logic of all diegetic revision. Semantic dualism, like descriptivism and referentialism, is ultimately then a hypothetical rather than a categorical view. *If* one is committed to descriptivism or referentialism, *then* one must be committed to both.

Regardless semantic dualism remains a substantive thesis in the philosophy of language. It entails that descriptivism and referentialism can be complimentary rather than necessarily competitive semantic accounts. This is a unique result. Semantic dualism is also the semantic correlate of diegetic pluripotency, mentioned in the previous chapter. Discourses can be read as rebooting, rebooted, retconning, retconned, expanding, expanded, holdout, and rejected diegeses. Because descriptivism and referentialism cannot individually explain the diegetic logic of all these, semantic dualism is true.

Semantic Shifting

Two further results follow from semantic dualism. First, because diegetic revision involves proper names, neither descriptivism nor referentialism can by itself function as a complete analysis of such names. Our focus

on the logic of diegetic revision reverberates across the philosophy of language generally. Descriptivism and referentialism are not individually sufficient semantic accounts tout court. Second, because analyses of proper names can shift depending on the kind of revision in which their diegeses are involved, shifts between descriptivism and referentialism are required when explaining the diegetic logic of revision. Semantic dualism therefore entails the possibility of what we call ‘semantic shifting’.

Because we have been reading the 1937 edition of *The Hobbit* as rebooted by the 1951 edition and as retconned by *The Lord of the Rings*, we have witnessed semantic shifting between the rebooting and rebooted diegeses on the one hand, and the retconning and retconned diegeses on the other. The operative semantic account between the 1937 edition and 1951 edition is descriptivism, which shifts between the 1937 edition and *The Lord of the Rings* to referentialism. We have also therefore witnessed semantic shifting between the rebooted and retconned diegeses, which happen to be the same discourse: the 1937 edition. Nor need semantic shifting involve the same discourse read as different diegetic-revisionary kinds. Suppose that we continue to read the 1937 edition as rebooted by the 1951 edition, and that additionally we read (as nearly all do read) Sir Arthur Conan Doyle’s 1893 short story “The Final Problem” as retconned by his 1903 “The Adventure of the Empty House.” Though in the discursively earlier diegesis, ‘Sherlock Holmes’ is associated with ‘the great detective who dies at Reichenbach Falls’ and in the discursively later diegesis with ‘the great detective who does not die at Reichenbach Falls but pretends to do so’, in each case ‘Sherlock Holmes’ is read as referring to and meaning Sherlock Holmes regardless of its associated descriptions. Referentialism applied to ‘Holmes’ explains the retcon. The operative semantic account has shifted from descriptivism in Tolkien’s reboot to referentialism in Conan Doyle’s retcon.

Semantic shifting has remained invisible for three reasons. First, it follows from semantic dualism, which as far as we know we are the first to propose. Nor is it clear how one could come upon the idea of semantic shifting independent of something like semantic dualism. Second, semantic shifting occurs only when a discourse is first read as rebooted or as a holdout (which also requires descriptivism) and then as retconned, or vice versa. And much reading involves either no revision, the same kind of revision, or expansions. And, even in those cases, such shifting is almost always implicit. Nonetheless in principle readers could reason that what is important about proper names occurring in different diegeses sometimes is their associated descriptions. This is how to understand what is going on between the 1937 edition of *The Hobbit* and the 1951 edition. They could also reason that what is important at other times is their referents. That is how to understand what is going on between the 1937 edition and *The Lord of the Rings*.

Regardless something similar to semantic shifting has been recognized by Keith Donnellan:

I will call the two uses of definite descriptions I have in mind the attribute use and the referential use. A speaker who uses a definite description attributively in an assertion states something about whoever or whatever is the so-and-so. A speaker who uses a definite description referentially . . . uses the description to enable his audience to pick out whom or what he is talking about and states something about that person or thing.

(1966/2008, 267)

The correctness of Donnellan's view is not now our concern, and later we explain that Donnellan's alleged referential use is illegitimate. The present point is that Donnellan's "duality of function" (265) of definite descriptions provides a model for semantic dualism, both because it is a kind of semantic dualism and because it is dualistic in our disjunctive sense. Donnellan explains:

Suppose one is at a party and, seeing an interesting-looking person holding a martini glass, one asks, "Who is the man drinking a martini?" If it should turn out that there is only water in the glass, one has nevertheless asked a question about a particular person, a question that it is possible for someone to answer.

(268)

There 'the man drinking a martini' is used referentially to mean its referent even though the referent is described incorrectly.

Contrast this with the use of the same question by the chairman of the local Teetotalers Union. He has just been informed that a man is drinking a martini at their annual party. He responds by asking his informant, "Who is the man drinking a martini?" In asking the question the chairman does not have some particular person in mind about whom he asks the question; if no one is drinking a martini, if the information is wrong, no person can be singled out as the person about whom the question was asked.

Here 'the man drinking a martini' is used attributively. The chairman is not referring to any particular person. Rather he wants to know whether any particular person fits the description 'the man drinking a martini'. The same definite description, 'the man drinking a martini', is used in either one of two ways depending on context. Suppose (as Donnellan did) that in each context the description refers to a different person. The function of the description still shifts. This parallels the ability of semantic dualism

to explain the diegetic logic of revision concerning non-overlapping discourses, as in the shifting from Tolkien's to Conan Doyle's case above. Suppose (as Donnellan did not) that the interesting looking person at the party and the man about whom the chairman is informed—the person of whom it is asked “Who is the man drinking a martini?”—is the same person. The function of the description again shifts though this time when referring to the same person. That parallels the ability of semantic dualism to explain the diegetic logic of revision concerning overlapping discourses, as in the shifting from one of Tolkien's cases to another.

Besides differing from semantic dualism because it concerns uses of definite descriptions rather than proper names, according to Donnellan, on his view:

It is possible for a definite description to be used attributively even though the speaker (and his audience) believes that a certain person or thing fits the description. And it is possible for a definite description to be used referentially where the speaker believes that nothing fits the description.

(269)

According to semantic dualism, when discourses are read as involved in reboots or holdouts, descriptivism applies; in retcons, referentialism applies; and in expansions, both apply. And discourses read as involved in any of these depends on their readers. So it is impossible for a proper name to be used descriptively where the reader believes that it is involved in a retcon, and it is impossible for it to be used referentially where the reader believes that it is involved in a reboot or a holdout.

Nonetheless the structural similarity is noteworthy. According to Donnellan, those failing to appreciate the duality of attributive and referential uses of definite descriptions “make a common assumption . . . that we can ask how a definite description functions in some sentence independently of a particular occasion upon which it is used” (266). According to semantic dualism, descriptivists and referentialists likewise make a common assumption that we can ask how a proper name functions in some diegesis independently of a particular occasion upon which it is read. If it is read in a reboot or holdout, then it functions according to descriptivism. If it is read in a retcon, then it functions according to referentialism. If it is read in an expansion, then it functions according to both.

Semantic Objections

In the next chapter we explore the metaphysical foundations of fiction and fact and in subsequent chapters apply semantic dualism to them as well as to diegeses concerning faith. We close this chapter with objections. Two kinds stand out. The first, which is metaphysical, concerns how

semantic dualism relates to possible worlds and reference. To address these, our account needs metaphysical foundations. So we postpone them until the next chapter. We turn to the second category of objections, which is semantic, here. We consider four.

Objection 1

Either descriptivism or referentialism explains the diegetic logic of reboots. Because (suppose) we established that referentialism explains the diegetic logic of retcons, referentialism explains both. Descriptivism is superfluous and so semantic dualism false.

Descriptivism explains the diegetic logic of reboots by maintaining that ‘Bilbo’ in the 1937 edition of *The Hobbit* and ‘Bilbo’ in the 1951 edition have different associated descriptions. Changing the descriptions changes the referent and meaning, and with them the world. Referentialism seems able to explain the same diegetic logic by maintaining one of two things:

- (i) ‘Bilbo’ in the 1937 edition and ‘Bilbo’ in the 1951 edition are different names that refer directly to and mean different individuals. (We might think of the different names as ‘Bilbo₁’ and ‘Bilbo₂’ referring directly to and meaning Bilbo₁ and Bilbo₂, respectively.)
- (ii) ‘Bilbo’ in the 1937 edition and ‘Bilbo’ in the 1951 edition are the same name that used to refer directly to and mean one individual but now refers directly to and means another. (We might think of the same ‘Bilbo’ as referring directly to and meaning first Bilbo₁ and then Bilbo₂.)¹¹

If either (i) or (ii) succeeds, then semantic dualism must be rejected. Nonetheless both (i) and (ii) fail to explain the diegetic logic of reboots.

(i) fails because it is too weak. If ‘Bilbo’ and ‘Bilbo’ are different names for different Bilbos, then both Bilbos can exist in the same world after its alleged “reboot.” Yet after a real reboot only one Bilbo should exist in a world, since the reboot replaces the 1937 edition with the 1951 edition, thereby replacing its world. Descriptivism explains that by appealing to different descriptions. Those associated with ‘Bilbo’ in the 1937 edition do not refer to Bilbo in the 1951 edition. According to (i), however, because referentialism does not mediate reference through descriptions, there is no replacement. Both Bilbos exist in the same world.

(ii) fails because it is too strong. If ‘Bilbo’ in each edition is the same name, where that name initially referred directly to and meant one individual but later came to refer directly to and mean another, then the earlier individual is no longer Bilbo. Only the latter is. Yet individuals in rebooting and rebooted diegeses still are the individuals that they are in each diegesis, even if they are not the same individual across diegeses. Bilbo in the 1937 edition of *The Hobbit* and Bilbo in the 1951 edition are

both Bilbos. They just are not the same Bilbo in the same world. (ii) however renders only the latter individual Bilbo. The former individual ceases being Bilbo. While rebooting should replace the 1937 Bilbo in one world with the 1951 Bilbo in another, it should not replace the 1937 Bilbo with the 1951 Bilbo in the 1937 Bilbo's world.

Objection 2

Conversely, either referentialism or descriptivism explains the diegetic logic of retcons. Because (suppose) we established that descriptivism explains the diegetic logic of reboots, descriptivism explains both. Referentialism is superfluous and so semantic dualism false.

Our formulation of descriptivism suggests that all descriptions are equally important in determining reference and meaning. Yet most descriptivists likely endorse something such as this instead:

- (a) **Reference:** A proper name refers indirectly to its referent through the mediation of *central, a majority of, or weighted* descriptions associated with the name.
- (b) **Meaning:** The meaning of a proper name is exhausted by *central, a majority of, or weighted* associated descriptions.

While other descriptions might change during retcons, these privileged ones do not.

The reply has two parts. First, our characterization of descriptivism is consistent with this version. So we may use either. Second, this version is inadequate to explain the referents of proper names in retcons. Not only is it unclear which descriptions are central, a majority, or weighted, but even the best candidates can change in a retcon. Perhaps 'the hobbit led out of the tunnel by Gollum intentionally', associated with 'Bilbo' in the 1937 edition of *The Hobbit*, and 'the hobbit led out of the tunnel by Gollum unintentionally', associated with 'Bilbo' in *The Lord of the Rings*, is not a central or otherwise privileged description. But 'the creature who led Bilbo out of the tunnel intentionally' and 'the creature who led Bilbo out of the tunnel unintentionally' is a central description associated with 'Gollum' in each work, respectively. They refer to one of his most important properties. So, even if there are clearly privileged descriptions, they too can change.

Objection 3

Again, either referentialism or descriptivism explains the diegetic logic of retcons. Because (suppose) we established that descriptivism explains the diegetic logic of reboots, descriptivism explains both. Referentialism is superfluous and so semantic dualism false.

Referentialism explains the diegetic logic of retcons by maintaining that proper names refer directly to and mean their referent. Descriptivism seems able to explain the same by maintaining that only the terminal descriptions associated with a proper name are correct. ‘Bilbo’ in the 1937 edition of *The Hobbit* and ‘Bilbo’ in the 1951 edition refer indirectly to and mean the same Bilbo, because ‘Bilbo’ in the 1937 edition and ‘Bilbo’ in the 1951 edition are both correctly associated only with the descriptions associated with ‘Bilbo’ in *The Lord of the Rings*. Both names mean ‘the hobbit led out of the tunnel by Gollum unintentionally’. In the 1937 edition ‘Bilbo’ means this implicitly and in the 1951 edition explicitly. This in effect shows that (a) and (b) of descriptivism have terminal correlates:

- (a) **Reference:** A proper name refers indirectly to its referent through the mediation of its *terminal* associated descriptions.
- (b) **Meaning:** The meaning of a proper name is exhausted by its *terminal* associated descriptions.

Call that view ‘terminal descriptivism’. Because sameness of referent may not survive changing descriptions, but terminal descriptions do not change, terminal descriptivism is essentialist about reference.

One might counter that terminal descriptivism is not a species of descriptivism. Regardless, if terminal descriptivism is a species of descriptivism, then *descriptivism* explains the diegetic logic of both rebooting and retconning. If terminal descriptivism is not a species of descriptivism, then *descriptivism* and *terminal descriptivism* explain the diegetic logic of reboots and retcons, respectively. Either way referentialism is still superfluous, and so semantic dualism is still false.

Because the heart of descriptivism is that reference and meaning are distinct, we are inclined to regard terminal descriptivism as a species of descriptivism. Terminal descriptivism does not however explain the diegetic logic of retcons. The notion of terminal descriptions is ambiguous. Terminal descriptions are either currently terminal or ultimately terminal, neither of which explains the diegetic logic.

If descriptions are *currently* terminal, then the referent and meaning of a name changes when *current* descriptions change. In 1937 the terminal descriptions associated with ‘Bilbo’ were those in the 1937 edition of *The Hobbit*. After 1954 the terminal descriptions associated with ‘Bilbo’—even in the 1937 edition—were those in the 1954–55 *The Lord of the Rings*. But then there are two Bilbos. There is the Bilbo according to the 1937 edition in 1937, and the Bilbo according to the 1937 edition and *The Lord of the Rings* after 1954. Contradictory descriptions entail different referent and meaning. Yet, according to retconning, there was always only one Bilbo. He was simply described differently in 1937 and 1954–55. Hence terminal descriptions cannot be currently terminal.

If terminal descriptions are *ultimately* terminal, then the referent and meaning of a name never changes. There was always one Bilbo. Nonetheless, since ‘Bilbo’ was always associated with descriptions from the 1954–55 *The Lord of the Rings*, besides its referent and meaning never changing, its descriptions never change either. ‘Bilbo’ was always correctly associated with ‘the hobbit led out of the tunnel by Gollum unintentionally’. There are two problems with that. First, the motivation to appeal to descriptions is epistemological. It is to include beliefs had by the reader in determining referent and meaning. Yet these descriptions cannot figure in beliefs had by the reader if the reader reads the 1937 edition of *The Hobbit* before 1954, and would never figure in her beliefs at all were she never to read *The Lord of the Rings*. Second, while retconning requires that referent and meaning remain constant—there is only one Bilbo—it also requires that descriptions do not. Retconning involves bringing a discursively earlier diegesis into *retroactive* continuity with a discursively later one. According to terminal descriptivism, however, the discursively earlier diegesis was always diegetically continuous with the later one. ‘Bilbo’ was always associated with ‘the hobbit led out of the tunnel by Gollum unintentionally’. But then there was nothing to retcon. Indeed, if terminal descriptions are ultimately terminal, then retconning is impossible.

Objection 4

Once more, either referentialism or descriptivism explains the diegetic logic of retcons. Because (suppose) we established that descriptivism explains the diegetic logic of retcons, descriptivism explains both. Referentialism is superfluous and so semantic dualism false.

Referentialism explains the diegetic logic of retcons for reasons already known. Descriptivism, one might object, explains the same diegetic logic by relying on Donnellan’s “duality of function.” According to Donnellan, descriptions used attributively refer to their referent depending on how it is described and used referentially refer to their referent independently of how it is described. One might press that, by describing Bilbo in the 1937 edition of *The Hobbit* as ‘the hobbit led out of the tunnel by Gollum intentionally’, we are describing Bilbo referentially. Though we learn in *The Lord of the Rings* that, like the man in Donnellan’s first example, this describes Bilbo incorrectly, we nevertheless refer to Bilbo. Donnellan in effect shows that the (a) and (b) of referentialism have descriptive correlates:

- (a) **Reference:** A *description used referentially* refers directly to its referent without the mediation of the *content* of its associated descriptions.
- (b) **Meaning:** The meaning of a *description used referentially* is exhausted by its referent and so independent of the *content* of its associated descriptions.

Call that view ‘descriptive referentialism’. Because sameness of referent survives changing descriptions used referentially, descriptive referentialism is essentialist about reference.

One might counter that descriptive referentialism is not a species of referentialism. Regardless, if descriptive referentialism is a species of referentialism, then *descriptivism* and *referentialism* explain the diegetic logic of both reboots and retcons, respectively. Referentialism is not superfluous. If descriptive referentialism is not a species of referentialism, then *descriptivism* and *descriptive referentialism* explain the diegetic logic of reboots and retcons, respectively. Referentialism is superfluous and so semantic dualism false.

Because the heart of referentialism is that referent and meaning are the same, we are inclined to regard descriptive referentialism as a species of referentialism. Referentialism is then not superfluous and so semantic dualism remains true. Suppose however that descriptive referentialism is a species of descriptivism. We now have two ways of explaining the diegetic logic of reboots and retcons, respectively: *either* descriptivism and referentialism, *or* descriptivism and descriptive referentialism. Hence *either* descriptivism and referentialism, *or* descriptivism and descriptive referentialism, explain the logic of all diegetic revision. Since referentialism is required by only the first of two disjuncts, it is to that extent superfluous. Semantic dualism is to that extent false.

It is dubious whether referentialism’s being needed by only the first of two disjuncts is enough to make semantic dualism false tout court. It is also irrelevant. The second disjunct—descriptivism and descriptive referentialism explain the logic of all diegetic revision—is false because descriptive referentialism is inadequate as a semantic account. As Kripke (1970/2005, 87, n. 37; 1977/2008, 157–58) observed, a speaker would withdraw a description allegedly used referentially if she learned that it attributed the wrong description to its referent. Descriptive content matters even in allegedly referential uses. Suppose in Donnellan’s example that the person at the party who sees the interesting-looking person holding a martini glass and asks, “Who is the man drinking a martini?” learns that there is only water in the glass. She might say, “Sorry, I meant the man drinking water.” Were her initial description, ‘the man drinking a martini’ really used referentially, then after she learned that there is only water in the glass she would continue to refer to the person as ‘the man drinking a martini’. Likewise, when we learn in *The Lord of the Rings* that Bilbo is in correctly described in the 1937 edition of *The Hobbit* as ‘the hobbit led out of the tunnel by Gollum intentionally’, we do not continue describing him that way either. Our initial description was used attributively too.

For Kripke, this does not establish that descriptions are semantically relevant. They are corrected because they are psychologically so. Regardless it does establish that cases of descriptions allegedly used referentially

turn out to be cases of descriptions used attributively that make incorrect attributions. That is why those who use descriptions allegedly used referentially would correct their content. But then there is no separate referential use of descriptions. Only the first disjunct mentioned is true. Descriptivism and referentialism, but not descriptivism and descriptive referentialism, explain the logic of all diegetic revision. Semantic dualism is true.

Notes

1. Deborah Modrak claims that in the *Cratylus* “[t]hroughout, it is assumed that reference is secured by description. . . . The correctness of a name is a function of its describing the intended referent correctly” (2015, 22). Description captures what we think about a name’s reference.
2. According E. Jennifer Ashworth (1981), John Locke’s view develops naturally out of prior scholastic theories.
3. See Goldberg (2015, 175–77) for the sense in which Frege’s account of meaning is Platonic realist.
4. Recently philosophers have argued that the reference-mediating role played by descriptions can be played by something else. John McDowell (1977), following Davidson (1984/2001, essay 2) in arguing that a Tarski-style theory of truth for a language amounts to a theory of meaning for that language, contends that knowledge of such a theory can play the role. Discussing non-referring, or “empty,” names, Mark Sainsbury (2005) contends that a name-using practice can do so. And, arguing for what he calls “semantic relationalism,” Kit Fine (2009) contends that the way in which names are “coordinated” with one another can do so. We set these versions aside.
5. Later we consider the objection that most descriptivists likely endorse a version of descriptivism that focuses on central, a majority of, or weighted descriptions.
6. See Patrick Rysiew (2015, 232–33) for more on Reid.
7. See Sainsbury (2005, 2–8) for more on Mill.
8. It might be especially difficult to see how this is so concerning fiction. See Chapter 3.
9. See Robert Hanna (2006, 144, n. 7) and Ian Hacking (2007) for other differences between Putnam’s and Kripke’s views. See Goldberg (2015, 177–81) for the sense in which Putnam and Kripke’s shared account of meaning is Aristotelian realist.
10. Referentialism approximates what many call ‘Millianism’. Nathan Salmon distinguishes “*Millianism* . . . according to which the semantic contents of certain simple singular terms, at least ordinary proper names and demonstratives, are simply their referents” from “the *theory of direct reference*, according to which the semantic content of a name or demonstrative is not given by any definite description” (1998, 278). Salmon’s Millianism and theory of direct reference are both contained within referentialism’s (b). In (b)’s terms, Millianism is the view that the meaning of a proper name is exhausted by its referent, and the theory of direct reference is the view that the meaning of a proper name is independent of its associated descriptions.
11. This is similar to Gareth Evans’ (1973/2008, 534–35) claim that ‘Madagascar’ referred first to an area on the mainland and then to an island.

3 Metaphysical Foundations of Fiction and Fact

In Chapter 1 we identified reboots, retcons, and expansions as ways of revising diegeses; holdouts as a way of rejecting those kinds of revision; and reconstructions as ways of supplementing diegeses. In the previous chapter we identified descriptivism and referentialism as semantic accounts that explain the diegetic logic of each and argued that neither can by itself explain all such diegetic logic. Here we provide metaphysical foundations of fiction and fact. Because our exemplary diegeses are fiction, we start there.

Analyzing Fiction

Metaphysical foundations, and therefore analyses, of fiction are varied. Just as in the previous chapter we fashioned semantic dualism by drawing on two semantic accounts previously construed competitors, here we fashion our analysis of fiction by drawing on two similar analyses likewise construed. Rather than establishing that each analysis is relevant in different contexts, however, we extract from them two complementary claims necessary for our own. That then permits devising an analysis of fact, and ultimately a distinction between fiction and fact, which we compare to other prevalent analyses.

The two analyzes on which we draw are Lewis's (1978/1983) and Kripke's (1973/2013, lectures 3 and 6). Lewis (1978/1983) analyzes fiction by appealing to merely possible worlds. Kripke (1973/2013, lectures 3 and 6) analyzes it by appealing to the actual world. The two claims that we draw from them are these: (i) every diegesis refers to a possible world, either actual in the case of factual diegeses or merely possible in the case of fictional diegeses, and (ii) every diegesis regardless of kind is constituted when a discourse is read.

Lewis helps us establish (i) regarding fiction. His analysis is of "truth in fiction," specifically, what makes fictional sentences true. That analysis is complicated partly because it is designed to head-off counterexamples. We are concerned only with its core. Lewis maintains that a fictional "story" is a story told as known fact in a merely possible world.¹ For it to

be so told the story must be true in that world and those who hear it must know that it is. Hence, for Lewis, whatever else it is, a fictional story is true in a merely possible world.² We only partly agree. Unlike Lewis, we maintain that the telling of a story need not be true in but instead merely refer to a merely possible world. That is so whether the telling is accurate or inaccurate about—or, as explained in the next chapter, reports correctly or incorrectly on—the world. There are two reasons that we maintain this. First, a story told by an unreliable narrator, as all except for a so-called “omniscient narrator” arguably are, is presumed not always told as known fact in its world. Second, because retconning can show that sentences previously thought correct about a world were instead incorrect, sentences refer to worlds regardless of their truth at that world. When read as retconned by *The Lord of the Rings*, the 1937 edition of *The Hobbit* contains details that are known lies.

We therefore extract a more limited claim from Lewis: a fictional story is a story referring to a merely possible world. Further, because only linguistic objects can refer, by ‘story’ we take Lewis to mean diegesis.³ If a fictional diegesis is a diegesis referring to a merely possible world, then a fictional *world*, the world to which the story or diegesis refers, is itself a merely possible world. Bilbo exists in some merely possible world. Details of the diegesis, what we have been calling ‘diegetic details’, then are distinct from details of the world, what we may now call ‘worldly details’. Both diegetic and worldly details are expressed in language. The diegetic/worldly distinction roughly tracks the mention/use distinction. If diegeses are regarded as mentioning details, then they are regarded as containing diegetic details. If diegeses are regarded as using details, then they are regarded as referring to worldly details. Lewis says something consonant: “We make stipulations that select some worlds rather than others for our attention” (1986/2001, 3). For Lewis, we stipulate worldly details with diegetic details.

Kripke helps us establish (ii). He (1973/2013, lectures 3 and 6) distinguishes his view of *possibilia*, which is not realist, from his view of fiction, which is. For Kripke, fictional worlds are real because they are created by a “story,” as he calls it—where once created the story exists independently of us. By ‘story’ we take Kripke to mean either a discourse or a diegesis depending on context. Kripke is concerned with completed texts, which are human creations. Whatever other properties they have, they have purely physical ones. Completed texts are discourses. Moreover Kripke’s own referentialist account of meaning has a causal component, and we have causal contact with (tokens of) created texts directly. But Kripke also contends that a fictional world is created by a fictional story. Because a discourse is purely physical and so by itself linguistically inert, only a (type or token of a) diegesis (on our view), constituted when a discourse is read, could create a fictional world. Hence, while Lewis does not draw the discourse/diegesis distinction, he does not need

to do so, since his analysis can be cast entirely in terms of diegeses. While Kripke does not draw the distinction either, he does need to do so, since his analysis requires both something purely physical, which (as a type) may be published and with which (as a token) we can have cause contact, and something linguistic, which (as a type or token) details a world.⁴

Kripke's analysis differs from Lewis's in other ways too. For Kripke, unlike for Lewis, a fictional world is not a merely possible world. It is instead that part of the actual world created by (as we would amend) an actual diegesis, constituted when an actual discourse is read. For Kripke, the world of Middle-earth associated with the 1937 edition of *The Hobbit* is part of the actual world because it is created by the 1937 edition, an actual fictional diegesis, constituted when the discourse is read by readers, who are actual too. Bilbo is in turn an actual fictional individual.⁵ Kripke contrasts actual fictional individuals with merely possible ones. We might imagine Bolbo, who in some possible variant on the 1937 edition is Bilbo's twin, whom Gandalf sends on an adventure in Bilbo's stead. There is no actual fictional individual, however, because there is no actual discourse that when read is constitutive of an actual diegesis that refers to Bolbo. No human being ever created one. Bilbo is actually fictional while Bolbo is merely possibly so.⁶

Hence, though Lewis and Kripke have their differences, each permits talking about fictional diegeses "referring" to worlds. Nonetheless the nature of reference differs. For Lewis, fictional diegeses refer to concreta in merely possible worlds. For Kripke, fictional diegeses refer to abstracta in the actual world. While their analyses do differ, we combine two elements from Kripke's to those elements extracted from Lewis's.

First, we adopt Kripke's emphasis on the importance of discourses as created objects. Because discourses when read are constitutive of diegeses, Kripke is right that Bilbo is an actual fictional individual while Bolbo is not. Our incorporating Lewis's analysis of fictional worlds as merely possible worlds can accommodate this. For a possible world to be an actual fictional world requires an actual discourse—an actual creation—read as constitutive of an actual diegesis to which it refers. An actual fictional diegesis, even if referring to some merely possible world, requires a discourse as well as readers in the actual world.

Second, we adopt Kripke's appeal to the actual world directly. While Lewis reduces talk of "fiction" to talk of "merely possible worlds," Kripke recognizes fictional individuals, objects, and events as existing in the actual world. Bilbo is actually fictional, or a fictional individual referenced in the actual world, while Bolbo is not. Our incorporating Lewis's analysis can accommodate this also. Reduction is not elimination. For Lewis, the world of Middle-earth, while a merely possible world, may also be counted as an actual fictional world. It is the actual fictional world to which an actual fictional diegesis refers. That actual fictional world is not however the actual world. For Kripke, that is because the

fictional world exists abstractly as only part of the actual world. For Lewis, that is because the fictional world is a merely possible world relative to the actual world. Though being an abstraction in and being relative to the actual world differ, Lewis and Kripke can agree that there are actual fictional worlds. They can also agree, as do we, that there is only one actual, or actually factual, world.

We can combine all these elements from Lewis's and Kripke's analyses to yield our own analysis of fiction. An actual fictional diegesis, constituted when an actual discourse is read, refers to a merely possible, or actually fictional, world. That the world is merely possible is its metaphysical status. That it is actually fictional is its diegetic status. This is consistent with ordinary language. Bilbo, we ordinarily say, does not actually exist. Nonetheless, we might also ordinarily say, Bilbo could have existed had biology, history, metallurgy (accounting for magic rings), etc., sufficiently differed. Regardless, we might ordinarily say as well, Bilbo is an actually fictional individual. Unlike Bolbo, there is an actual diegesis (constituted when an actual discourse is read) that refers to Bilbo. Had biology, history, metallurgy, etc., sufficiently differed, then Bilbo might not be actually fictional.

Distinguishing Fiction From Fact

It turns out that (i) and (ii)—that every diegesis refers to a possible world, either actual in the case of factual diegeses or merely possible in the case of fictional diegeses; and that every diegesis regardless of kind is constituted when a discourse is read, respectively—are also necessary for our analysis of fact. Indeed their application to fiction already makes clear their application to fact. A factual diegesis, constituted when a discourse is read, refers to the actual, or actually factual, world. The world's being actual is its metaphysical status, and its being actually factual is its diegetic status.

Yet, while that follows directly from (i) and (ii), we can say something more about our metaphysical foundations. Tolkien was onto something when (as explained in Chapter 1) in "On Fairy-stories" (1947/1966) he distinguished secondary from primary worlds. A secondary world is the world in which the individuals, objects, and events of a diegesis exist. The primary world is the world in which readers, including the author, discourse, and diegesis exist. We can now appreciate that in a fictional diegesis secondary and primary worlds differ. Readers are reading about a world different from their own. In a factual diegesis the two worlds are the same. Readers are reading about their world. Fact therefore involves a secondary world that is not merely secondary but also primary.

We have then two ways to distinguish fiction from fact, which we combine. A fictional diegesis refers to a secondary world that is merely possible, or actually fictional—and so different from the primary world. A

factual diegesis refers to a secondary world that is actual, or actually factual—and so the same as the primary world. ‘Bilbo’ itself refers to a merely possible, or actually fictional, individual. ‘Tolkien’ conversely refers to an actual, or actually factual, one. In Chapter 5 we observe a third way based on diegetic-revisionary kinds of reboots, retcons, expansions, and holdouts to distinguish fiction from fact.

Fiction and fact are not themselves diegetic-revisionary kinds. They can but need not be involved in diegetic revision. Nor are fiction and fact diegetic auxiliary kinds, such as reconstructions. They do not supplement diegeses. Fiction and fact are sometimes called ‘genres’. Keeping with our nomenclature, call them ‘diegetic kinds’. They are kinds of diegeses generally rather than kinds of diegeses involved in revision or supplemental activities specifically. Moreover, as explained in the next two chapters, any diegetic-revisionary or diegetic auxiliary kind can also be fictional or factual. And our response-dependence account of diegeses mentioned in Chapter 1 applies to diegetic kinds. A discourse is a fictional or factual diegesis if and only if read as that kind. And that involves reading it as referring to its requisite world.

Other Analyses of Fiction and Fact

Many other analyses of fiction have been offered, though many distinguish fiction not from fact but from such things as “nonfiction” or the “real world.” Fiction and nonfiction are mutually exclusive and exhaustive diegetic kinds. While it is unclear whether fiction and the real world are either, fiction and fact—as explained in the next chapter—are not exhaustive. Regardless philosophers distinguishing fiction from some other diegetic kind usually mean to capture a distinction similar to ours between fiction and fact. Even then they often focus on fiction, where fact is understood by contrast. We keep this in mind as we compare our analysis with prominent others.

We already discussed Lewis’s (1978/1983) and Kripke’s (1973/2013, lectures 3 and 6) analyses of fiction to help establish our claims (i) and (ii). Though they do not offer explicit analyses of fact, we can surmise theirs by contrast. For Lewis, fact refers to the actual world. For Kripke, though both refer to the actual world, fiction refers to that part of the world created by “stories,” while fact does not. Because neither Lewis nor Kripke discusses discourses and diegeses, each is silent on our (ii). Neither therefore relativizes fiction or fact to readers. Because Lewis is a possibilist and Kripke an actualist about fiction, moreover, only Lewis agrees with our (i).

While Lewis’s and Kripke’s are especially prominent, in the analytic tradition the earliest and perhaps simplest analyses of fiction are Frege’s (1892/2008) and Russell’s (1905/2008). Like Lewis’s and Kripke’s, Frege’s and Russell’s analyses also do not discuss discourses and diegeses, and so

are also silent on our (ii). Neither also relativizes fiction (or fact) to readers. Nor does either discuss worlds, actual or merely possible. Frege and Russell are therefore both silent on our (i). The common core of Frege's and Russell's analyses is instead that fiction mentions proper names lacking referents. The 1937 edition of *The Hobbit* mentions 'Bilbo', which, according to their views, refers to nothing. Because Russell accepts descriptivism and since he could understand descriptions as expressing senses Frege would too, they can maintain that 'Bilbo' means the descriptions associated with the name. Because, for them, 'Bilbo' does not refer, however, Frege and Russell cannot explain the diegetic logic of retcons. Further, as explained in the next chapter, fact also often mentions proper names lacking referents. As explained there, in the second half of the nineteenth century many authors of factual diegeses used 'Vulcan' to refer to what was thought to be a planet, when it was not until the second decade of the twentieth century that the name was demonstrated not to refer as such. According to their view, Tolkien's novels about hobbits and astronomers' articles about planets later discovered not to exist turn out to be on par. Frege and Russell cannot distinguish fiction from incorrect fact.

Peter van Inwagen (1977) presents an intermediate position between Frege and Russell's view that a proper name in fiction "does not denote anything" (299), and a kind of Meinongianism according to which some names have referents with "the attribute of non-existence." According to van Inwagen, "[c]reatures of fiction exist" but only insofar as they "have or exemplify . . . 'literary' properties" (309). These properties include such things as "being introduced in CH. XIX" but not "being fat" (309). Because van Inwagen maintains that sentences from novels "are not about anything" other than presumably such literary properties, he would reject our claim that such sentences are about merely possible, or actually fictional, worlds, following from our (i). Because van Inwagen ignores the role of readers in determining semantic properties, he is silent on our (ii). While such Meinongianism could be enough for van Inwagen to explain the diegetic logic of retcons, which Frege and Russell cannot, his view is otherwise strained. According to it, Bilbo is not the hobbit led out of the tunnel by Gollum intentionally or not—depending on which discourse one reads. Yet in all cases most readers would claim that van Inwagen is mistaken. That is who Bilbo is. Most readers would not agree with that Bilbo is instead merely the character mentioned (wherever he is mentioned) in the 1937 edition of *The Hobbit*, the 1951 edition, and *The Lord of the Rings*. At best they would agree with both or try to reconcile the two. Further, van Inwagen is silent on how to handle proper names in fact that do not denote anything, such as 'Vulcan'. Though his Meinongianism would presumably apply there too, regardless, like Frege and Russell, he would still be unable to distinguish fiction from incorrect fact.

In a different vein though also related to reference, John Searle distinguishes "fictional discourse" from "real world talk" (1969, 78). Searle

does not limit his analysis to discourses in our sense, since he is concerned with “talk,” or speech acts, generally. Otherwise his analysis is consistent with our appeal to worlds, our (i), as when he writes:

In fictional talk ‘Sherlock Holmes’ refers, for such a character really does exist in fiction, but ‘Mrs. Sherlock Holmes’ fails of reference because there is no such fictional character.

(78)

For Searle, Holmes “really does exist,” just not in the real—our actual, or actually factual—world. Though not distinguishing purely physical from linguistic aspects of “talk” as we distinguish discourses from diegeses, Searle apparently accepts the significance that we place on physical objects such as discourses, our (ii). “‘Mrs. Sherlock Holmes’ fails of reference” because, in our terms, no discourse when read constitutes a diegesis in which she exists. Contrary to our neutrality on the metaphysics of possible worlds, however, Searle implies that the merely possible worlds of fiction are created by authors: “Because the author has created these fictional characters” presumably as members of merely possible worlds of fiction, “we . . . can make true statements about them as fictional characters” (1974, 329). Still, modulo that difference, Searle’s analysis of fiction is consistent with ours. It is unclear however how Searle could distinguish fiction from fact containing proper names that do not refer. Nonetheless our idea in the next chapter is somewhat analogous to his about ‘Sherlock Holmes’. In incorrect factual talk ‘Vulcan’ refers, for such a planet really does exist in a merely possible, or possibly factual, world, but ‘Vulcan’ fails of actual reference because there is no such factual planet.

One way to distinguish fiction from fact, correct or otherwise, is to appeal to its authors’ intentions. Whether or not ‘Vulcan’ refers to a planet in the actual, or actually factual, world, many authors of factual diegeses intended ‘Vulcan’ to do so. Neither Frege’s or Russell’s, van Inwagen’s, Searle’s, nor our own analysis grants any specific role to authors’ intention. Others’ do.

At one end of the intentionalist spectrum are Noel Carroll’s (1992; 2000), Paisley Livingston’s (2005), and Robert Stecker’s (2006) analyses, each of which advances a moderate authorial intentionalism. According to their common core, when reading fiction a reader should if necessary supplement the author’s intention, which can be hidden, with her own interpretation of the fiction. Such moderate intentionalism is similar to what Stephen Davies (2006) terms “hypothetical intentionalism,” according to which when reading fiction a reader should if necessary supplement the author’s intention with the reader’s hypothesis about what that intention was. Like our analysis, moderate and hypothetical intentionalism leave room for responses of readers. So moderate and hypothetical intentionalism leave room for reading a discourse as constituting

a diegesis, our (ii). Unlike ours, however, such intentionalism requires room for the author's intention in its own right. Because we acknowledge that the author is an especially well-informed reader, we acknowledge the importance of the author, though on our analysis her reading rather than her intention is important. Further, as our case studies in the next several chapters demonstrate, it is common in the history of scientific and religious development for later discourses to be read as correcting, or retconning, earlier ones. Because of their reliance on authors' intention, moderate and hypothetical intentionalism cannot always explain the diegetic logic of retcons. Such intentionalism can however leave room for fictional diegeses to refer to merely possible, or actually fictional, worlds, our (i). Understanding fiction as such might provide a metaphysics for their analysis.

Situated at the same end of the intentionalist spectrum is Monroe Beardsley's (1958) analysis of "fiction" and "nonfiction." Considering different possible approaches, Beardsley suggests that "the difference between fiction and nonfiction is not a difference at all in the discourse itself, but lies in the attitude assumed by the reader . . . toward it" (420). This analysis sounds response-dependent, our (ii). Yet Beardsley also analyzes fiction as depending on an author's asserting "a sentence in such a way as to show that [the author] believe[s] it" and so "to invite [the author's] audience to believe it too. . . . [A] fiction is a discourse in which the Report-sentences are not asserted" (420). He therefore acknowledges a reader-attitude approach that it is not "the whole story." This might make Beardsley's analysis seem like moderate or hypothetical intentionalism, where reader attitudes supply meaning when an author's intention is unknown. If so, then his analysis, like these others', is ultimately not consistent with our (ii), nor can it always explain the diegetic logic of retcons. Regardless, it is consistent with fictional diegeses referring to merely possible, or actually fictional, worlds, our (i). Understanding fiction as such might provide a metaphysics for Beardsley's analysis too.

At the other end of the intentionalist spectrum is Kathleen Stock's "extreme intentionalism" (2017, 13). Stock presents her view in opposition to "a kind of anti-intentionalism effectively argued for by the philosopher David Lewis" (12), where Lewis's anti-intentionalism is consistent with our own. Nonetheless, unlike Lewis and ourselves, as well as moderate and hypothetical intentionalists, Stock regards "fictional content as (only) generated by authorial intentions" (13) and fictions themselves as only "collections of intentional instructions to imagine certain things" (145). The actual author's intention alone determines the diegesis constituted when a discourse is read. Stock's analysis therefore is inconsistent with our (ii). Further, extreme intentionalism would have even more difficulty than moderate and hypothetical intentionalism explaining the diegetic logic of retcons in the history of scientific and religious development. Under certain circumstances Stock does permit diegeses to refer to

merely possible worlds because counterfactuals refer to them. While not “automatically appropriate to work out what is fictionally true by treating fiction as counterfactual,” she explains, it is appropriate “*where we have a prior understanding that this is what the author intends to do*” (52). Under those circumstances this is consistent with our (i). Under them therefore understanding fiction as such might provide a metaphysics for her analysis as well.

Rather than authors’ intentions, Stacie Friend analyzes fiction by focusing on readers’ expectations and inferences—which, as with the remaining views, also presumably can distinguish fiction from incorrect fact. Because expectations and inferences are responses, her analysis is close to our (ii). Further, for Friend, fiction and nonfiction are distinct genres, or as she prefers “super-genres,” since ‘genre’ typically refers to categories within fiction and nonfiction (2012, 181). Friend’s super-genres are close to our diegetic kinds. As well, her appeal to “situation” or “mental models” and how reading is “a mental activity that involves constructing a complex representation of what a story portrays” (2017, 31) connects something like our response-dependence account of diegeses to cognitive science. By acknowledging that such things as the location of a text (our discourse) on a bookstore shelf can influence such determinations, Friend (2012) even suggests that diegetic kind can vary between readers and the same reader at the same time, which we explain later. Friend further claims: “When we read a story, we do not simply imagine a series of propositions, we imagine a *world*.” Such a world seems like one of our merely possible ones, our (i). Nonetheless Friend also argues: “in reading we take works of fiction, like works of non-fiction, to be about the real world—even if they invite us to imagine the world to be different from how it actually is” (40). While imaginings would be ways in which the actual (or “real”) world might have been but is not, she continues that “imagining a storyworld does not mean directing one’s imagining toward something other than the real world” (40). We are unsure what directing one’s “imagining toward” means, but if it means something like referring to it, then this differs from our (i). An imagined storyworld (or fictional world) is on our analysis distinct from the actual, or actually factual, world. If directing one’s “imaging toward” the real world means something like understanding the fiction as being applicable to the real world by imitating it in certain ways, then Friend means what we call ‘mimetic applicability’, explained below. On that meaning, her analysis of fiction approximates ours overall.

Other analyses of fiction turn to make-believe, pretense, and truth instead. Kendall Walton (1990) analyzes fiction as “props” in the real (or actual, or actually factual) world that readers use to “make-believe” or “pretend” that a story being told is true. Because they would be props only if their users respond to them as such, this is consistent with the response-dependence account of fiction in our (ii). It also expands it, since

costumes, objects in nature, and replicas can be response-dependently used as props too. Moreover making-believe or pretending that a story being told is true is consistent with its being true in a merely possible, or actually fictional, world, our (i). Admittedly, Walton rejects “fictionality as a species of truth” and warns against associating his “fictional worlds with the possible worlds of semantic theory” (57). Consistent or not, therefore, Walton would reject (i). Regardless he understands a fictional world as “the world of a game of make-believe or dream or daydream or representational work art,” arguing that the proposition “there is a society of six-inch-tall people” is not only “fictional” but specifically “*Gulliver’s Travels*-fictional” (35). This is not so different from our (i).

Finally, Peter Lamarque and Stein Haugom Olson argue that “the concept of truth has no central or ineliminable role in critical practice” (1994, 1), and Avrum Stroll and A.P. Martinich argue that fiction involves speech acts made with the knowing suspension of concern for truth (2007). Lamarque and Olson analyze fiction from the reader’s perspective, and Stroll and Martinich from the author’s. We agree that the concept of truth has no central or ineliminable role in fiction if limited to the concept of actual truth. Fiction involves merely possible truth, our (ii). Conversely, writing and reading works are both speech acts to the extent that writers and (other) readers speak in print or otherwise to themselves or others. On our analysis, writers and (other) readers read fiction with the knowing suspension of concern for actual truth. They may still be concerned with merely possible truth, again our (ii). And both cases are consistent with the requirement that an actual discourse exists whose reading results an actual diegesis, our (i). So Lamarque and Olson’s, and Stroll and Martinich’s, analyses seem consistent with our own.

What should we make of all this? A majority of these other views can (and some do) countenance possible worlds and so can (and do) regard fictional diegeses as referring to merely possible ones. Presumably all these other views regard factual diegeses as referring to the actual world. So our (i) is no outlier. Because, our (ii), a diegesis is a discourse when read, our distinction between fiction and fact is more compatible with those analyses consistent with if not also relying on reader interpretation. Nor need it be entirely incompatible with those emphasizing authorial intention, since authors would and others could read a discourse consistent with such intention. This however would be less likely with retcons, especially in the history of scientific and religious development.

Metaphysical-Semantic Objection

In the next chapter we expand our metaphysical foundations to explain reporting of fact, applying of fiction, and bracketing of diegeses. We close this chapter with an objection about how semantic dualism relates to our metaphysical foundations of fiction particularly.

Semantic dualism is the view that neither descriptivism nor referentialism can by itself explain the logic of all diegetic revision. Now descriptivism is consistent with proper names, if meaningful, referring to individuals, objects, and events. Yet descriptivism does not require that those names refer. It merely requires that, if meaningful, they have associated descriptions. Referentialism however does require that they refer. Associated descriptions are semantically irrelevant, and meaning is exhausted by reference. Thus, one might object, because Bilbo is fictional and so on our view merely possible, ‘Bilbo’ is not meaningful—because names cannot refer to merely possible individuals, objects, or events.

Names nevertheless can and do refer to them. They name individuals, objects, or events, whether actual or merely possible. The World Meteorological Association begins each year with a list of names of possible hurricanes. Some of those hurricanes remain merely possible while others become actual. ‘Patty’ was chosen to refer to the sixteenth hurricane in the 2018 season. Because only 15 hurricanes formed, ‘Patty’ refers to a possible hurricane that never became actual. Moreover, Mill, Putnam and Kripke’s referentialist progenitor, himself observed: “All names are names of something, real or imaginary” (1843/2001, I.ii.5). Since merely possible, or actually fictional, individuals can be imagined, even Mill would think that ‘Bilbo’ is the name of Bilbo.⁷

Both descriptivism and referentialism can therefore accommodate reference to merely possible, or actually fictional, individuals, objects, and events, and so worlds. We explain this further in the next chapter. Yet one might have a further worry. According to Putnam’s and Kripke’s version of referentialism, a proper name, if it refers, does so because it is part of a causal chain of uses originating when someone in causal contact with its referent baptized that referent with that name. Putnam’s and Kripke’s views, besides being collectively called the “new theory of reference,” are also called the “causal theory of names” or “causal theory of reference.”⁸ Merely possible, or actually fictional, referents, however, one might worry, cannot be baptized because they are abstract. Their baptizers cannot therefore be in causal contact with them. There are three replies.

First, our philosophical account of revision requires semantic dualism. Semantic dualism does not require a causal element. A version of referentialism incorporating a causal element is inessential.

Second, while Putnam remained silent, Kripke’s (1973/2013, lectures 3 and 6) is the paradigmatic version of referentialism applied to fiction and he designed it with his causal account in mind. Kripke focused on published texts, which are discourses, and as such (qua token) are objects in causal contact with authors and (other) readers. To this we added that discourses when read are constitutive of diegeses. Reading is a causal event, and diegeses are the causal result of that event. Nonetheless Kripke’s own view is that “stories,” our diegeses, create the worlds to which they refer—worlds that are abstract. And we cannot have causal

contact with abstracta. Bilbo, as an abstractum, is not himself in the causal order. Ultimately therefore, regardless of the causal elements of Kripke's account, on his own view 'Bilbo' is not causally connected to Bilbo. Kripke's application of the causal theory of reference to fiction itself has a non-causal ultimate step.⁹

And third, the same applies to cases of fact, as Kripke's (1970/2005) and Putnam's (1973/2008) version of referentialism there has a non-causal ultimate step too. According to them, at some point in history someone came into causal contact with gold and baptized it 'gold' (or the equivalent in her language). Gold itself as a type is abstract and as a token concrete. Since gold as a type is also a kind—viz., a chemical element—occurring naturally, it is a natural kind. As explained in Chapter 5, Kripke treats 'gold' as a proper name that refers to the kind. Now, on his view, the baptizer of gold came into causal contact with a token of gold, which is concrete. But, also on his view, in so baptizing the token the baptizer baptized all tokens, including those with which she had no causal contact, as well as the type, with which, because it is abstract, none could ever have any causal contact. Ultimately therefore, for them, 'gold' is not causally connected to certain tokens of gold and can never be causally connected to gold the type. Moreover, on their view, in the twentieth century others determined that a different token of gold had 79 protons, thereby determining that all tokens as well as the type do also. Putnam's and Kripke's application of the causal theory of reference to natural kinds has a non-causal ultimate step too.

Hence, not only do we not require a causal version of referentialism, but the alleged requirement for one allegedly came from Putnam and Kripke, when their own versions applied to fiction and fact require non-causal contact with objects. Regardless, these results in mind, we might nevertheless modify referentialism:

- (a) **Reference:** A proper name refers directly to its referent without the mediation of its associated descriptions.
- (b) **Meaning:** The meaning of a proper name is exhausted by its referent and so independent of its associated descriptions.
- (c) **Causality:** The meaning of a proper name is exhausted by its referent, where that referent is causally (even if not ultimately) connected to the name.

Call that view 'causal referentialism'. The heart of causal referentialism is that reference and meaning are the same, and that proper names are causally (even if not ultimately) connected to them. Like referentialism generally, its causal species is essentialist about reference. Causal referentialism captures more of Kripke's (1970/2005) and Putnam's (1973/2008) views than referentialism does. It can be applied to words such as 'gold' and 'Bilbo' alike. Following Kripke's terminology, we may say that the

conjunction of (a)–(c) entails that such words are “rigid designators.” So formulated, causal referentialism can function as a semantic account for fiction as well as it can for fact. Though not required, it is therefore compatible with our analysis.

Nor might only referentialism be so modified. Though descriptivism does not require a causal connection between descriptions and reference either—Russell’s (1905/2008; 1910–11/1986; 1912/1997, chapter 5) view on proper names particularly does not involve causal contact—one is possible. For descriptivism, proper names still refer indirectly to their referent through the mediation of their associated descriptions, which refer directly. ‘Bilbo’ still refers to Bilbo through the mediation of descriptions such as ‘the hobbit led out of the tunnel by Gollum intentionally’. On our view, that description would still be constituted when the physical object ‘the hobbit led out of the tunnel by Gollum intentionally’ is read. Nonetheless the descriptions can be causally connected to their referent too. Thus we might modify descriptivism:

- (a) **Reference:** A proper name refers indirectly to its referent through the mediation of its associated descriptions.
- (b) **Meaning:** The meaning of a proper name is exhausted by its associated descriptions.
- (c) **Causality:** The meaning of a proper name is exhausted by its associated descriptions, where those descriptions are (even if not ultimately) causally connected to the name.

Call that view ‘causal descriptivism’.¹⁰ The heart of causal descriptivism is that reference and meaning differ, and that proper names are causally connected to descriptions. Like descriptivism generally, its causal species is not essentialist about reference. Though causal descriptivism is not Russell’s view, it is congenial with it. Russell (1911/1986; 1912/1997, chapter 5) tried to explain how knowledge of things with which we are not directly acquainted is reducible to knowledge of things with which we are. For Russell, we can be directly acquainted with sense-data, introspective experiences, universals, and (maybe) ourselves. Acquaintance is not meant to be causal, but one might expand Russell’s notion to include it. Perhaps ‘gold’ means ‘the element with atomic number 79’ and its other associated descriptions, themselves ultimately connected to ‘that’ used ostensibly, and therefore causally, in the presence of gold. The descriptions might then be causally related to an exemplary gold token. Likewise, ‘Bilbo’ means ‘the hobbit led out of the tunnel by Gollum intentionally’ and its other associated descriptions, ultimately connected to ‘that’ used ostensibly, and therefore causally, in the presence of Bilbo as created when the 1937 edition of *The Hobbit* is read. Lewis himself considers the possibility of causal descriptivism concerning fiction:

Many of us have never read the stories, could not produce the descriptions that largely govern the non-rigid [and, for Lewis, non-referentialist] sense of “Sherlock Holmes,” yet use this name in just the same sense as the most expert Baker Street Irregular. . . . The ignoramous uses “Sherlock Holmes” in its standard non-rigid sense if he has picked it up (in the right way) from someone who knew the governing descriptions, or who picked it up from someone else who knew them, or . . .

(1978/1983, 267, n. 8.)

What is meant to replace Lewis’s terminal ellipses and so terminate the causal chain are those of us having read the stories, and so learned who *that*, viz., Sherlock Holmes, is.

Notes

1. In full: “A sentence of the form ‘In the fiction f , f is non-vacuously true iff, whenever w is one of the collective belief worlds of the community of origin of f , then some world where f is told as known fact and f is true differs less from the world w , on balance, than does any world where f is told as known fact and is not true. It is vacuously true iff there are no possible worlds where f is told as known fact” (Lewis 1978/1983, 274). Because on his view reasoning about fiction is like reasoning about counterfactuals, and counterfactual conditionals with false antecedents are vacuously true, Lewis distinguishes vacuous from non-vacuous truth. Because he recognizes that fiction does not explicitly state all its truths, Lewis limits the possible world in which a sentence in fiction is true to a collective belief world of the community of the fiction’s origin—where such a world is one in which the community’s overt beliefs are all true. Though no modal realist, Wolterstorff’s (1980) analysis of art as involving projected worlds is similar.
2. Lewis himself wrote of *The Lord of the Rings*: “Tolkien explicitly purports to be the translator and editor of the Red Book of Westmarch, an ancient book that has somehow come into his possession and that he somehow knows to be a reliable record of the events. In these exceptional cases, the thing to do is to consider those worlds where the act of storytelling really is whatever it purports to be—ravings, reliable translation of a reliable source, or whatever—here at our world” (1978/1983, 266, n. 7). While Lewis might seem to be saying that the world of Middle-earth itself should be considered our world, we read his point to be about on which possible worlds to focus when evaluating the truth of *The Lord of the Rings*, which itself—as we maintain that it does—refers to a merely possible world.
3. More specifically, he understands diegeses as tokens (1978/1983, 265), though we continue to understand them as types.
4. According to Salmon, Kripke’s view of fictional names has two steps. First, “our language licenses a certain kind of metaphysical move. It postulates an abstract artifact, the fictional character, as a product of this pretense.” Second, “at a later state when discussing the fictional character from a standpoint outside the fiction, speaking about the pretense and not within it, . . . the language makes a second move, this one semantical rather than metaphysical, giving the name a new, non-pretend use as a name for the fictional

character” (Salmon 1998, 294). Salmon explains that his “interpretation of Kripke is based partly on notes [he] took at [Kripke’s] seminars on the topic of reference and fiction at Princeton University during March–April 1981” (314, n. 32). For his part, Salmon urges that the first step need not be regarded as pretend, thereby making the second step superfluous (299).

5. See Amie Thomasson (1996; 1999/2008; 2003) for an “artifactualist” view of fiction similar to Kripke’s. Thomasson’s artifacts, like Kripke’s stories, are abstract objects.
6. Though not in the context of fiction, Kripke (1970/2005, 24, 156–58) denies the possibility of unicorns on the grounds that as mythical creatures they lack clearly defined essential features such as genetic structure or evolutionary history. So, per impossible, were something to resemble a unicorn, there would be no fact of the matter about whether it really was one. For Kripke, one might object, there could be no Bilbo either. There are two replies. First, we are sympathetic with Michael Dummett’s (1993a) rejection of Kripke’s reasoning based on Dummett’s rejecting the modal B axiom, viz., that a proposition implies the necessity of its possibility. Insofar as Dummett is right, Kripke should permit the possibility of unicorns as well as Bilbo. Second, Tolkien’s account of Bilbo does provide something like genetic structure and evolutionary history. So, even if unicorns cannot exist, on Kripke’s own view perhaps Bilbo can.
7. Russell’s view is that every name is a name of something real “or it is not a name” (1918–19, 241). Hence, according to Mill, ‘Bilbo’ is a name, while, according to Russell, it is not. We side with Mill. (According to Sainsbury [2005, 91], Russell’s is also Anselm’s and Boethius’s view.) As explained in note 9, Salmon (1998, 285–89) argues that names can refer to possible objects, and Salmon (289–91) and Kaplan (1971, 135) argue that they can refer to future objects.
8. As explained in the previous chapter, see Hanna (2006, 144, n. 7) and Hacking (2007) for differences between Putnam’s and Kripke’s views.
9. Kripke’s account applied to mathematical objects would have the same problem. See Sainsbury (2005, 108) for discussion. Salmon (1998, 285–89) argues that names can refer to possible objects by means of possible causal chains, and Salmon (289–91) and David Kaplan (1971, 135) argue that names can refer to future objects by means of future causal chains.
10. Frederick Kroon’s “causal descriptivism” likely includes (a) and (b) but limits (c) to descriptions of a name’s “causal-historical reference-determining conditions” (2014, 145).

4 Reporting, Applying, Bracketing

We have identified discourses that when read are constitutive of diegeses that are fictional and factual, respectively. Those discourses are read *as* fictional and factual diegeses, respectively—or, more briefly still, *as* fiction and fact. Here we canvas various case studies of fiction and fact to reveal distinctions relevant to each diegetic kind. This in turn permits expanding our metaphysical foundations to include fictional, correct factual, and incorrect factual objects. We then rely on an examination of evidence to identify a hitherto unnoticed kind of diegesis distinct from fiction and fact.

A Plurality of Planetary Objects

While we maintain that fictional and factual diegeses refer to worlds usefully understood in Lewis's sense, the fictional and factual cases that we consider refer to worlds also in the pedestrian sense of planetary objects—relatively large objects on which individuals, (other) objects, and events exist. We canvas six case studies of planetary objects in terms of discourses read as fictional or factual diegeses referring to them.

Our first case study is Middle-earth's planet. The 1937 edition of *The Hobbit* read as retconned by *The Lord of the Rings*, the 1951 edition read as a reconstruction of the 1937 edition as retconned by *The Lord of the Rings*, and *The Lord of the Rings* read in turn all refer to the same world—Chapter One's "world-1"—of which Middle-earth is a part. Middle-earth is not itself a planet. It is part of a planet, and that planet is not ours. Admittedly Tolkien's literary conceit is otherwise. In the 1937 edition of *The Hobbit* and the 1951 edition he writes: "I suppose hobbits need some description nowadays, since they have become rare and shy of the Big People, as they call us. They are (or were) a little people" (2002, 30). By 'us', Tolkien means us, his readers. In *The Lord of the Rings* he claims that *The Hobbit* and *The Lord of the Rings* itself were translations from the Red Book of Westmarch (1954–55/1994, 10), which details actual individuals, objects, and events as recorded by Bilbo with certain passages—especially concerning Bilbo's encounter with Gollum—amended by Frodo and perhaps others.¹ Regardless, biology,

history, and metallurgy differ on Middle-earth from on the actual earth. The actual earth has no hobbits, dwarves, wizards, magic rings, or adventures involving them.²

Our second case study just is the actual, or actually factual, earth. Innumerable discourses read as diegeses refer to its biology, history, metallurgy, and more. Anticipating explanations to come, consider two discourses from the history of astronomy. One is Claudius Ptolemy's *Almagest*, completed c. 150. Because the *Almagest* described planets as having geocentric orbits, and since the earth does not orbit itself, it did not categorize the earth as a planet, though the *Almagest* categorized the sun and moon as such. The other discourse is Nicolaus Copernicus's *De revolutionibus orbium coelestium* (*On the Revolutions of the Celestial Spheres*), or "*De Revolutionibus*," published in 1543. *De Revolutionibus* did describe planets as having heliocentric orbits, and therefore did categorize the earth as a planet, categorizing the sun and moon as not.

Our third case study concerns the only object described by both the *Almagest* and *De Revolutionibus* as having a geocentric orbit, viz., the moon—or at least it apparently concerns the moon, since the discourse that we consider was first read as fact and then as fiction. Beginning on 25 August 1835, the New York newspaper (coincidentally named) *The Sun* published daily installments of "Great Astronomical Discoveries Lately Made by Sir John Herschel." Allegedly excerpted from an article in the *Edinburgh Journal of Science* written by Herschel's assistant and concerning the moon, the six parts begin with a plausible-sounding description of Herschel's telescope and progress to more fantastical content, including geography, vegetation, animal life, and eventually a civilization of bat-winged human-like beings and their religious temples. Yale faculty soon traveled to *Sun* offices to read the original article—which did not exist. *The Sun* announced the following month that their article had not been written by Herschel nor any astronomer but instead by *Sun* employee Richard Adams Locke as a hoax. Locke's moon was not actually the moon. It was instead similar to Middle-earth's planet.³

Reflecting on the actual moon helps introduce our fourth case study, Pluto. Since the moon does not have a heliocentric orbit, neither the actual moon nor Locke's merely possible one would be a planet according to *De Revolutionibus*. An object with a heliocentric orbit did not remain the understanding of a planet for long however. Comets have such orbits, and more recently other objects have been discovered having them too. In 2005 Mike Brown, Chad Trujillo, and David Raboniwitz discovered one such object more massive than Pluto. In "IAU0605: IAU Names Dwarf Planet Eris," a 2006 article in the *International Astronomical Union News*, the International Astronomical Union (IAU) named the object 'Eris'. Wanting a limit on the number of planets in our solar system,⁴ in the same year the IAU adopted "RESOLUTION B5: Definition of a Planet in the Solar System":

Contemporary observations are changing our understanding of planetary systems, and it is important that our nomenclature for objects reflect our current understanding. This applies, in particular, to the designation “planets.” The word “planet” originally described “wanderers” that were known only as moving lights in the sky. Recent discoveries lead us to create a new definition, which we can make using now available scientific information.

The IAU therefore resolves that planets and other bodies, except satellites, in our Solar System be defined into three distinct categories in the following way:

- (1) A planet is a celestial body that
 - (a) is in orbit around the Sun;
 - (b) has sufficient mass for its self-gravity to overcome rigid body forces so that it assumes a hydrostatic equilibrium (nearly round) shape; and
 - (c) has cleared the neighborhood around its orbit.
- (2) A “dwarf planet” is a celestial body that
 - (a) is in orbit around the Sun;
 - (b) has sufficient mass for its self-gravity to overcome rigid body forces so that it assumes a hydrostatic equilibrium (nearly round) shape;
 - (c) has not cleared the neighborhood around its orbit; and
 - (d) is not a satellite.
- (3) All other objects, except satellites, orbiting the Sun shall be referred to collectively as “Small Solar System Bodies.” (International Astronomical Union 2006)

Comets fail (1)(b), (1)(c), and (2)(b), but satisfy (3). The earth continues to satisfy (1), and so the IAU’s resolution left Copernicus’s understanding of it in place. The IAU’s resolution did however change our understanding of Pluto. It had been categorized as a planet since 1930 when Clyde Tombaugh of the Lowell Observatory sent the Harvard College Observatory a telegraph announcing its discovery.⁵ Yet Pluto, along with Eris and similar objects, fails (1)(c). Pluto particularly shares its orbital neighborhood with Kuiper belt objects. The IAU’s resolution recategorized Pluto as a dwarf planet, the largest beyond the orbit of Neptune.⁶

With the redefinition of ‘planet’ by the IAU, Neptune—our fifth case study—was now the farthest planet from us. Neptune has another distinction due to its discovery. It was the first astronomical object in modern times to have been initially hypothesized before being observed.⁷ French mathematician Urbain Le Verrier calculated Neptune’s orbit by relying on discrepancies in Uranus’s movements and on Isaac Newton’s

theory of gravitation and Johannes Kepler's laws of planetary motion, the latter of which were based on Copernicus's heliocentric model. Le Verrier announced his findings in June 1846. Because the French Academy of Sciences had not begun a search for confirmation by September, Le Verrier sent his results in a letter to Johann Gottfried Galle at the Berlin Observatory with the following request:

Today, I would like to ask my untiring observer whether he was willing to spend a few moments examining a region of the heavens, where it is possible a Planet remains to be discovered. . . . You will see, Sir, that I demonstrated that one cannot satisfy the observations of Uranus without introducing a new Planet, previously unknown: and what is remarkable, there is in the ecliptic only one position that can be attributed to this disruptive Planet.

(Le Verrier 1846/1910, trans. Goldberg)

Galle wrote back: "The planet, whose position you describe, really exists. On the same evening that I received your letter, I discovered a star. . . . The observations of the following night showed that this star is precisely the planet in question" (qtd. in Lowe 1847, 189). Galle used 'star' to mean something like an observable point of light in the sky. Soon news of Le Verrier's discovery spread. Sir John Herschel, whom Richard Adams Locke had impersonated for *The Sun* a decade earlier, called Le Verrier's calculations "thought in one of its highest manifestations" (quoted in Kollerstrom 2006, 151). *Lowe's Edinburgh Magazine*, in the article "M. Le Verrier's Planet," even praised the discovery on religious grounds:

Physical facts are in close and intimate alliance with Christian theology. They illustrate the unity of the Divine Nature, and the universality of the Divine Providence, by manifesting the universal action of fundamental laws, apparent as far as the regions of the creation can be examined by us. They testify of all that infinitude of power and wisdom which the Scriptures, in majestic language, ascribe to the "Blessed and only Potentate," and commend to our reverence the revealed representation of His matchless perfection and ineffable glory.

(184)

As historian Thomas Levenson observes, Le Verrier's discovery "[a]lmost instantly made him the most famous physical scientist in the world" (2015, 45).

The existence of Neptune—and possibly God—confirmed, Le Verrier turned his attention to the inner solar system. We next turn our attention to our sixth, and final, case study, mentioned it in the previous chapter. Again relying on Newton's theory and Kepler's laws, in September 1859 Le Verrier wrote Hervé Faye, Secretary of the French Academy

of Sciences, detailing his theory of “Intra-Mercurial Planets.”⁸ Le Verrier had studied 21 records from 1697 to 1848 of Mercury’s passing in front of the sun and found “systematic errors, that could not be ascribed to the observations.” Le Verrier urged: “The necessity of adding thirty-eight seconds to secular motion of the perihelion of Mercury being once admitted, let us inquire to what conclusions it will lead us.” The observed increase could be explained were the mass of Mercury a tenth greater than believed, which Le Verrier rejected on observational grounds, leaving the increase “owing to some agency still unknown” (1859/1860, 245, 246). Though Le Verrier initially hypothesized the existence of a planet “situated between Mercury and the Sun,” because such a “hypothetical planet” would be too “brilliant” to have gone unnoticed for long he ultimately argued “in the place of a single planet . . . [for a] series of small bodies” of the sort that “circulates between Jupiter and Mars . . . of which the largest alone have been seen in our telescopes.” Faye wrote back suggesting to verify “the probable existence of a series of small planets within the orbit of Mercury” with the total eclipse “of July next . . . about to afford us an opportunity of trying a first experiment.”⁹ That first experiment was upstaged by amateur French astronomer Edmond Modeste Lescarbault, who wrote to Le Verrier in December that the previous March he had observed a single planet brilliant enough by itself to be noticed.¹⁰ Nonetheless Lescarbault’s findings were questioned, and come the alleged planet’s next predicted solar transit in spring no astronomers observed any evidence of Vulcan, the name given by Jacques Babinet in 1846 and adopted by Le Verrier for the allegedly first intra-Mercurial planet, whose close solar orbit was suggestive of the Roman god of forge and fire. Faye’s own “first experiment,” the total eclipse in July, also found nothing.¹¹ Le Verrier died the following 23 September. Nearly a year later, on 8 August 1878, the *New York Times* did report “The Discovery of Vulcan” by American astronomer James Watson, who announced that, besides his own observations made during the latest eclipse, “the planet was seen by Mr. Lewis Swift. . . . [H]is observation is valuable as furnishing independent confirmation of my discovery” (5). But no other astronomers studying the same locations during the same period observed any planets. The discovery was soon discounted and Vulcan forgotten.

Not until Albert Einstein’s theory of general relativity, discussed in the next chapter, would most understand Le Verrier’s original “agency still unknown” to have been explained. Because the sun’s warping of space-time is greater near Mercury than further away in the solar system, Einstein’s theory answered Le Verrier’s indirect question: “what disturbing cause could derange the obliquity of the ecliptic, without, at the same time, exerting very conspicuous effects upon the secular variations on the elements of motion of the planets?” (1859/1860, 245). Mercury wobbled in its orbit, not because Vulcan’s gravity altered its orbit but because

the sun's enormous mass made space-time close to it especially curved. In 1915 Einstein wrote a friend: "The explanation of the shift in Mercury's perihelion, which is empirically confirmed beyond a doubt, causes me great joy" (qtd. in Fernie 1994, 415) because it confirmed general relativity.¹²

Reporting With Fact

We canvassed six planetary objects:

- (1) Middle-earth's planet, as detailed in the retconned 1937 edition of *The Hobbit*, the 1951 edition as a reconstruction of the 1937 edition as retconned by *The Lord of the Rings*, and *The Lord of the Rings*;
- (2) The earth, as detailed in Ptolemy's *Almagest* and Copernicus' *De Revolutionibus*;
- (3) The moon, as detailed in Locke's "Great Astronomical Discoveries";
- (4) Pluto, as detailed in Tombaugh's telegraph and the IAU's Resolution B5;
- (5) Neptune, as detailed in Le Verrier's 1846 letter;
- (6) Vulcan, as detailed in Le Verrier's 1859 letter.

Most if not all, ourselves included, read the discourses mentioned in (1) as fiction. At the time of its publication most read the discourse mentioned in (3) as fact, and afterward most if not all, ourselves included, as fiction. Because they are from the history of astronomy, a discipline whose discourses are read as referring to the actual, or actually factual, world, we maintain that most if not all, ourselves included, read those discourses mentioned in (2) and (4)–(6) as fact, even though perhaps none reads any of them today as fully correct. But are they fact?

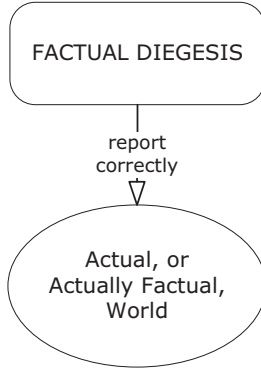
Generally, when a factual diegesis refers to the actual, or actually factual, world, and a fictional diegesis refers to a merely possible, or actually fictional, one, each does so by *reporting* on its respective world. Each kind of diegesis reports correctly or incorrectly. Its diegetic details particularly report correctly or incorrectly on their worldly correlates. Many today read Ptolemy's *Almagest* as reporting correctly on the approximate relative positions of planets but incorrectly on their geocentric orbits. That does not make the *Almagest* fictional. The Dewey Decimal System assigns the *Almagest* the classification 520 for works of astronomy, within the 500–599 range of natural science and mathematics. The Library of Congress Classification likewise assigns it the subclass QB also for works of astronomy, within the Q range of science. No library catalogs the *Almagest* as fiction. Likewise, though some might read Copernicus's *De Revolutionibus* as reporting correctly on their heliocentric orbits, Kepler's *Epitome astronomiae Copernicanae*

(*Epitome of Copernican Astronomy*)—whose volumes were published successively in 1617, 1620, and 1621—explained that *De Revolutionibus* reported incorrectly on these orbits' being circular rather than elliptical. That does not make *De Revolutionibus* fiction either. The same is so for our other cases. Many read Tombaugh's telegraph as reporting correctly on the existence of Pluto but incorrectly on its being a planet, since the IAU's resolution can be read as having recategorized Pluto. Many read Le Verrier's letter about Neptune as reporting correctly on its approximate position but incorrectly on its precise one, since subsequent calculations were more accurate. And many might think that Le Verrier's letter about Vulcan reported correctly on Mercury's orbit but incorrectly on Vulcan's explaining it, since Einstein's letter can be read as having explained Le Verrier's "agency unknown" away.

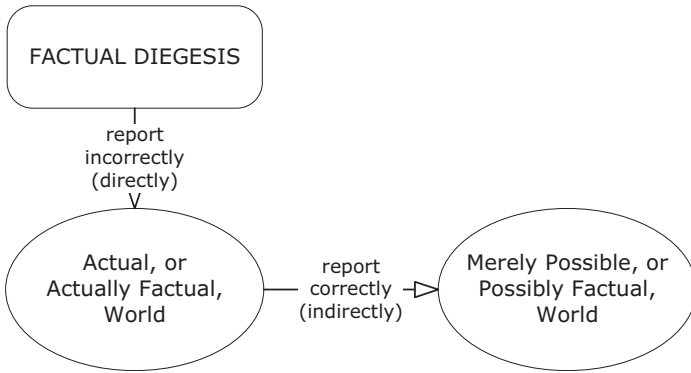
Hence to read the discourses mentioned (2) and (4)–(6) as fact does not mean that all or even a majority of their diegetic details are correct. It instead means that they report on worldly details, correctly or incorrectly, of the actual, or actually factual, world. Some discourses read as factual diegeses are read as being more correct than others, and perhaps some are read as mostly incorrect. Though they have many similarities in common with fiction, they are not fiction lest those details would not *be* incorrect. Any discourse can be read as fact or fiction, but except in the cases of hoaxes such as Locke's "Great Astronomical Discoveries" discourses read earlier as fact are usually not read later as fiction. Accepting current practice, we read Ptolemy's *Almagest*, Copernicus's *De Revolutionibus*, Tombaugh's telegraph, and Le Verrier's letter about Neptune as fact because each reports on the actual, or actually factual, world—even though none reports fully correctly. We even read Verrier's letter about Vulcan as fact. Verrier's letter detailed various planetary positions used by subsequent astronomers in their diegeses.

Though both correct and incorrect fact report on the actual, or actually factual, world, any diegesis that does not report fully correctly—and so ultimately reports incorrectly—on one world reports fully correctly on a merely possible version of it. Specifically, incorrect fact reports *directly* on the actual, or actually factual world, and *indirectly* on a merely possible world that, because it is a way in which the actually factual world might have been, is itself (merely) *possibly factual*. Thus Ptolemy's *Almagest* reports indirectly but fully correctly on a world in which planetary orbits are geocentric and circular, Copernicus's *De Revolutionibus* on a world in which planetary orbits are heliocentric and circular, Tombaugh's telegraph on a world in which Pluto is a planet, and Le Verrier's letter about Vulcan on a world in which Vulcan explains Mercury's orbit.

We may diagram a factual diegesis as reporting correctly and incorrectly, respectively.



and



Let ‘report correctly’ mean report fully correctly and ‘report incorrectly’ mean report not fully correctly, no matter the degree. As in our diegetic-revisionary diagrams, names of diegeses appear in boxes. We understand names in all capitals as naming diegeses by their diegetic kind. For clarity we include names of the respective worlds in ovals, identified metaphysically (“actual” or “merely possible”) and diegetically (“actually factual” or “possibly factual”) rather than numerically (“world-1” or “world-2”), as in Chapter 1. As in that chapter, black arrows, if any, indicate how discourses are read as diegetically revising, or as holdouts against diegetically revising, one another. Here and moving forward white arrows indicate how discourses are read as referring to worlds. Both when reporting is correct and when it is incorrect, the white arrow’s starting at a factual diegesis and ending at the actual, or actually factual, world indicates that such a diegesis reports on that world. Whether it reports correctly or incorrectly, it reports on that world directly. If it does so incorrectly, then it also reports correctly on a merely possible, or possibly factual, world

indirectly. As diagramed, reporting on a merely possible, or possibly factual, world is mediated by reporting on the actual, or actually factual, world, because the degree to which reporting on the former is incorrect just is the degree to which the merely possible, or possibly factual, world differs from the actual, or actually factual, world.

Something from this follows about the nature of merely possible worlds and how factual ones relate to fictional worlds. While all fictional worlds are merely possible worlds, not all merely possible worlds are fictional. In the previous chapter we heard one reason for that. Only possible worlds to which actual discourses read as fictional diegeses refer are fictional worlds. Middle-earth's world, where Bilbo lives, is both actually fictional and merely possible. The variant of Middle-earth's world, where Bolbo lives, while also merely possible, is not however actually fictional. That is because there is no actual discourse read as such a diegesis. Here we heard another reason that not all merely possible worlds are fictional. All factual diegeses refer to the actual, or actually factual, world directly. Both correct and incorrect factual diegeses do so by reporting on that world directly. Incorrect factual diegeses also refer to a merely possible, or possibly factual, world indirectly. Unlike incorrect factual diegeses, fictional diegeses refer to, by reporting on, merely possible worlds directly. We turn to such cases next.

Applying With Fiction

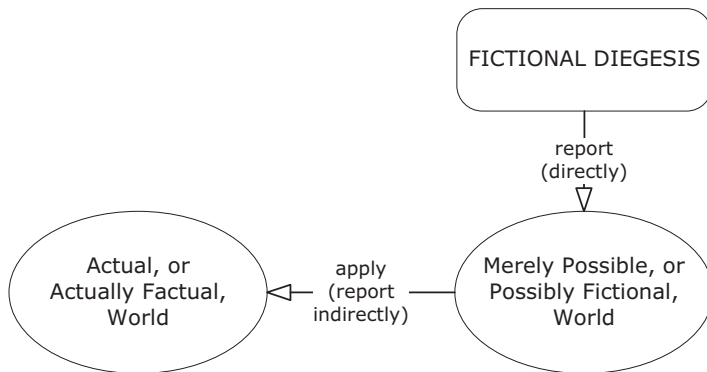
Reconsider (1) and (3), whose discourses we read as fiction. There are three ways in which fictional diegeses can report incorrectly on a merely possible, or actually fictional, one. First, diegeses referring to different worlds report incorrectly on each other's worlds. As usually read, the 1937 edition of *The Hobbit* reports incorrectly on the world on which Richard Adams Locke's "Great Astronomical Discoveries Lately Made by Sir John Herschel" reports and vice versa. Second, and a special case of the first, rebooting and rejected diegeses report incorrectly on the worlds on which rebooted and holdout diegeses, respectively, report. The 1937 edition reports incorrectly on the world on which the 1951 edition read as a reboot reports. For those who reject its diegetic revision, the 1937 edition reports incorrectly on the world on which *The Lord of the Rings* reports also. And third, a diegesis may ascribe contradictory details to its world, which a reader may discount to maintain coherence. Lewis (1978/1983, 275) considers such a case when Conan Doyle's *A Study in Scarlet* places Dr. Watson's war wound in his shoulder and *The Sign of Four* in his leg. Reading the two novels as referring to the same, coherent world requires that at least one of the diegetic details is read as reporting incorrectly on a worldly detail.¹³

Because fictional diegetic details refer to merely possible worlds, a reader learns about the world by reading the diegesis rather than by

exploring the world directly. More interesting therefore is the possibility of a fictional diegesis *applying mimetically* or *non-mimetically* to the actual, or actually factual, world.

Like ‘diegesis’, ‘mimesis’ is Plato’s word in the *Republic*. In Books II and III, ‘mimesis’ apparently means imitation in the sense of impersonation, as when an author ascribes dialogue to individuals by imitating what they would say were the dialogue factual (especially 392c–398b). In Book X it apparently means imitation in the sense of fictional representation, as when a painter or a poet produces fictional details that stand for factual ones (595a–608b). Aristotle uses ‘mimesis’ in the *Poetics* (1447a14–24) to mean something like fictional representation more generally.¹⁴ More recently, in *Mimesis as Make-Believe*, Kendall Walton (1990, 3) applies ‘mimesis’ to his own definition of ‘representation’. In literary theory, Suzanne Kean defines ‘mimesis’ as a work of fiction’s “success in representing reality truthfully,” often “in its construction of characters and actions in relationships that suggest the analogous configuration of the reader’s reality” (2003, 139). By ‘mimesis’ we mean the property that diegeses or their details have insofar as they report on a merely possible, or actually fictional, world or its details, by imitating—or being qualitatively identical with—the factual world or its details, respectively. Insofar as mimesis succeeds, it permits the diegesis to represent, or suggest the analogous configuration of, the reader’s reality—i.e., the actual, or actually factual, world. Call ‘mimetic applicability’ the degree to which fictional diegeses or their details are true in the actual, or actually factual, world.¹⁵

We may diagram the relationships between a fictional diegesis, such as Tolkien’s and Locke’s, the world on which it reports, and the world to which it applies.



White arrows continue to indicate how each discourse is read as referring. While with factual diegeses referring to the actual, or actually factual, world is reporting, with fictional diegeses referring to a merely possible, or possibly fictional, world is reporting. For fictional diegeses, referring to

the actual, or actually factual, world is a special kind of indirect reporting that is applying. Further, as diagramed, applying to the actual, or actually factual, world is mediated by reporting on a merely possible, or actually fictional, world, because the degree to which the application is non-mimetic just is the degree to which the merely possible, or actually fictional, world differs from the actual, or actually factual, world.

Hence, when readers consider the degree to which a factual diegesis reports correctly on the actual, or actually factual, world, they consider its relation to a merely possible version thereof. When readers consider the degree to which a fictional diegesis applies mimetically, they consider its relation to the actual, or actually factual, world.

Finally, regarding holdouts, rejecting factual and fictional revision both involve two worlds: the world of the accepted diegesis on which the rejected diegesis reports incorrectly, and the world of the rejected diegesis on which the rejected diegesis reports correctly. For factual diegeses, the world of the accepted diegesis is actual and the world of the rejected diegesis is merely possible. For fictional diegeses, both worlds are merely possible but distinct. A factual holdout rejects a revising diegesis because she reads it as reporting incorrectly on the world of the holdout diegesis, the actual world. Such a holdout may even call the revising diegesis ‘fiction’. Doing so however is rhetorical rather than diegetic. The holdout can reject the revising diegesis as incorrectly reporting (directly) on the actual, or actually factual, world, only if it reports on *that* world, and only a factual diegesis does that.

Fictional and Factual Planetary Objects

Fictional and factual apply to worlds. They also apply to their parts. Recall our plurality of planetary objects:

- (1) Middle-earth’s planet, as detailed in the retconned 1937 edition of *The Hobbit*, the 1951 edition as a reconstruction of the 1937 edition as retconned by *The Lord of the Rings*, and *The Lord of the Rings*;
- (2) The earth, as detailed in Ptolemy’s *Almagest* and Copernicus’ *De Revolutionibus*;
- (3) The moon, as detailed in Locke’s “Great Astronomical Discoveries”;
- (4) Pluto, as detailed in Tombaugh’s telegraph and the IAU’s Resolution B5;
- (5) Neptune, as detailed in Le Verrier’s 1846 letter;
- (6) Vulcan, as detailed in Le Verrier’s 1859 letter.

Because we follow current practice in reading the discourses mentioned in (1) and (3) as fictional diegeses, we regard (1) and (3) themselves as *fictional objects*. This accords with common usage. Middle-earth’s planet and Locke’s moon do not exist in the actual, or actually factual, world.

“Great Astronomical Discoveries” is however known to have been widely if only briefly read as a factual diegesis, and therefore (3) was for those readers a *factual object*. Insofar some read “Great Astronomical Discoveries” as reporting correctly, which some apparently did, (3) was also a *correct factual object*.

Because we follow current practice in reading the discourses mentioned in (2) and (4)–(6) as factual diegeses, we regard (2) and (4)–(6) as *factual objects*. This accords with common usage concerning (2) and (5). The earth and Neptune exist in the actual, or actually factual, world. Should Ptolemy’s *Almagest* and Copernicus’s *De Revolutionibus* ever be read as fictional diegeses, (2) would instead be a *fictional object*. Maintaining current practice and so the objects as factual objects does not accord with common usage concerning (6). Vulcan does not exist in the actual, or actually factual, world. Nor might it accord with common usage concerning (4). Pluto does not exist there as a planet, which is how it is described in Tombaugh’s telegraph. Nonetheless we do not read the diegeses resulting from the discourses mentioned (4) and (6) as reporting correctly. Vulcan is an incorrect actual, or actually factual, planet, because it does not exist in the actual, or actually factual, world. What was taken to be Vulcan turned out to be Le Verrier’s “agency unknown” explained in Einstein’s letter. Pluto is an incorrect actual, or actually factual, planet, because it does not exist as a planet in the actual, or actually factual, world. What was taken to be Pluto the planet turned out to be Pluto the dwarf planet as currently categorized by the IAU’s resolution. Pluto and Vulcan are for different reasons not planets. Vulcan is also an incorrect factual object tout court.

Admittedly, “incorrect factual object” might itself strain common usage. Nathan Salmon calls such objects “mythological,” where, unlike fictional objects, a “mythological object is a hypothetical entity erroneously postulated by a theory” (1998, 305). Salmon has in mind a scientific theory, which would be detailed in (on our view) an incorrect factual diegesis.¹⁶ Frederick Kroon distinguishes “purely fictional and mythological names (‘Holmes’, ‘Santa’, ‘Apollo’, etc.)”—thereby grouping fiction with mythology—from “names that fail for empirical reasons, such as ‘Vulcan’” (2014, 142, n. 1). Because only fact can fail for empirical reasons, mythological objects are not on this view empirical. They would not be incorrect factual objects in our terms or mythological objects in Salmon’s. Nor is Kroon necessarily wrong to place mythological objects on the fictional side. No matter how much “incorrect factual object” might strain common usage, it would do so less than saying that—knowingly or not—Babinet and Le Verrier (et al.) used ‘Vulcan’ as a mythological name for a mythological object.¹⁷ We therefore continue to call Vulcan an ‘incorrect factual object’. Vulcan and Pluto are for different reasons incorrect actual, or actually factual, planets.

Doing so also distinguishes Pluto and Vulcan, which are mentioned in incorrect factual diegeses, from Middle-earth’s planet and Locke’s

moon, which are mentioned in fictional diegeses. And they should be distinguished according, if not to common usage, then to common sense. Pluto and Vulcan were discussed by scientists. Middle-earth's planet and Locke's moon were discussed by a novelist and a fraud, respectively. As well, doing so distinguishes Pluto and Vulcan from the earth and Neptune, which are mentioned in (according to current practice) correct factual diegeses. According to common sense and common usage, these should be distinguished too. Pluto and Vulcan were determined not to be, while the earth and Neptune were determined to be, planets.

Evidence and Bracketed Diegeses

By appealing to evidence, a community can decide to what extent a factual diegesis reports correctly on, or a fictional diegesis applies mimetically to, the actual, or actually factual, world. The notion of evidence is complex, and evidence itself comes in different kinds. Because we are concerned with the basis for deciding how a diegesis relates to the actual, or actually factual, world, we focus on evidence in the form of worldly details.

Le Verrier's letter about Vulcan contains the diegetic detail that Vulcan passes through a certain point in the heavens observable from the earth. The worldly detail of its so passing or not so passing is evidence that the diegesis reports correctly or incorrectly, respectively. As James Watson said of Lewis Swift's worldly details of what both took as sightings of Vulcan: "his observation is valuable as furnishing independent confirmation of my discovery." The worldly details of several subsequent failed sightings however were stronger evidence that Le Verrier's letter reported incorrectly. The 1937 edition of *The Hobbit* contains the diegetic detail that Gollum engaged Bilbo in a game of riddles. The worldly detail of Gollum's so engaging or not so engaging Bilbo is evidence that the diegesis applies mimetically or non-mimetically, respectively. As it turns out, it applies non-mimetically for multiple reasons. Though games of riddles exist in the actual, or actually fact, world, Gollum's having engaged Bilbo in one does not.

Readers may also regard evidence as irrelevant if unconcerned with deciding to what extent a diegesis reports correctly or applies mimetically. While it would be strange to read a discourse as fact or fiction without wanting to decide this, it would not be strange to do so if one bracketed whether the discourse was itself fact or fiction. Call a 'bracketed diegesis' a discourse read as a diegesis but with its diegetic kind, fact or fiction, bracketed. Readers would bracket whether the diegesis's secondary world is the same as or different from its primary world. And our response-dependence account applies. A discourse is a bracketed diegesis if and only if read as such.

Diegetic bracketing is methodologically similar to the bracketing in Edmund Husserl's (1913/2014) phenomenological method. While we are naturally concerned with existing individuals, objects, and events,

according to Husserl we may bracket their existence and instead focus on the structures of our consciousness. Husserl calls this bracketing the ‘epoché’, which in English might be rendered as ‘suspension’, the moment that Ancient Greek skeptics described when withholding judgment about the existence of the external world. Similarly, we may bracket the existence of individuals, objects, and events on which diegeses report as well as whether the diegesis reports correctly on, or applies mimetically to, the actual, or actually factual, world. We would instead focus on the structures of the diegesis itself. Those structures include such things as style and plot.

Reading the 1937 edition of *The Hobbit* as a bracketed diegesis might involve recognizing that its first sentence—“In a hole in the ground there lived a hobbit” (Tolkien 2002, 29)—has a certain rhythm, alludes to hobbits’ relative humility, and perhaps implies their passing similarity to rabbits, spelled curiously closely to ‘hobbits’ and also living in holes in the ground. It might also involve recognizing its foreshadowing the deeper hole in the ground to which Bilbo is journeying, the ancestral home of Bilbo’s dwarven companions.

It is uncommon but not unheard of to read as bracketed discourses usually read as fact. Though most read Edward Gibbon’s *The History of the Decline and Fall of the Roman Empire* as fact, a reader might not know or care whether Gibbon is detailing factual or fictional events but still admire Gibbon’s style and plot. Consider its first sentence: “In the second century of the Christian Aera, the empire of Rome comprehended the fairest part of the earth, and the most civilized portion of mankind” (1776/1993, 3). Reading the discourse as bracketed might involve focusing on the alliteration within “second century” and “empire of Rome,” and the grammatical parallels between, on the one hand, “second century” and “Christian Aera,” and, on the other hand, “the fairest part of the earth” and “the most civilized portion of mankind.” It might also involve recognizing its foreshadowing degradation, detailed over six volumes, from fair to foul and civilized to sacked.

While historical novels and memoirs may be read as fiction and fact, respectively, they may sometimes be read as bracketed diegeses instead. Though it is tempting to read Hilary Mantel’s 2009 novel *Wolf Hall* as detailing the life of Thomas Cromwell and the government and culture of early 1500s England, most readers understand that Mantel had creative license to alter and invent details. Rather than being concerned with whether diegetic details report correctly or apply mimetically, such readers may instead focus on the diegesis’s style and plot. Though many early readers of James Frey’s 2003 memoir *A Million Little Pieces* read it as fact and felt betrayed when Frey admitted that it was largely factually incorrect, some later readers likewise read it as a bracketed diegesis. One such reader posted on the Seattle Public Library website: “I don’t care about the controversary [sic] that surrounded this book—it was a good

one—real or not real” (mccloskey72 2011), i.e., fact or fiction. Frey later expressed the same attitude to *Vanity Fair*:

I don't care, if somebody calls [*A Million Little Pieces*] a memoir, or a novel, or a fictionalized memoir, or what. I could care less what they call it. The thing on the side of the book means nothing. Who knows what it is. It's just a book. It's just a story.

(Peretz 2008)

Frey reads it just for its “story” and so as a bracketed diegesis. He encourages others to do so too.¹⁸

Monroe Beardsley (1958) may have a similar notion of bracketing in mind when he posits his “Nonpredication Theory” as a means of avoiding the implications of either the “Possibility Theory,” according to which fictional objects exist in “Worlds of Possibility,” and the “Falsity Theory,” according to which sentences about fictional objects are false. Thus he explains: “There are, of course, some false sentences in many works of fiction, especially historical novels; but it is probably a mistake to regard the fictional sentence as false. Rather we should say they are neither true nor false” (413). Similarly Matti Eklund (2005) coins ‘indifferentism’ to avoid ontological implications of fiction by arguing that “with respect to much that we say or imply we do not commit ourselves either to its literal truth or to its truth in any fiction; we are, simply, non-committed” (558). Bracketing a diegesis involves similar non-commitment.¹⁹

Finally, readers bracketing whether a diegesis is fact or fiction would automatically bracket whether its individuals, objections, and events are so too. Mantel's *Cromwell* may be regarded as neither fictional nor factual. Frey's experiences may be regarded as the same. Just as individuals, objects, and events can be regarded as fictional, correct factual, and incorrect factual, they can be regarded as bracketed too.

Diegetic Objections

In the next chapter we examine how our philosophical account of revision handles Thomas Kuhn's famous analysis of factual, and specifically scientific, change, and explains a further distinction between fiction and fact. We close this chapter with three objections.

Objection 1

Some diegeses apparently refer to combinations of fiction, correct fact, and incorrect fact. The 1937 edition of *The Hobbit* apparently refers to hobbits as persons, which is fiction, and men as persons, which is fact. Le Verrier's letter about Vulcan apparently refers to the earth as a planet, which is correct fact, and Vulcan as a planet, which is incorrect

fact. Discourses read as diegeses may also apparently be read as sometimes referring to bracketed details and other times not. Instead of reading them as bracketed in toto, perhaps that is the best way of reading *Wolf Hall* and *A Million Little Pieces*. One might object, therefore, that instead of only acknowledging kinds of *diegeses*, we must also acknowledge kinds of *diegetic details*. Perhaps readers do not read discourses only as fictional, correctly factual, incorrectly factual, or bracketed diegeses in toto but also or instead as individual fictional, correctly factual, incorrectly factual, or bracketed diegetic details.

We replied to the diegetic-revisionary version of this objection in Chapter 1 that any detail can in isolation be regarded as revising or revised by any other detail or a diegesis in toto but that doing so may damage the coherence of the respective diegesis. The same is so for any detail regarded as fictional, correctly factual, incorrectly factual, or bracketed. Four cases need considering.

First, regarding diegeses as combining bracketed details with either fictional or factual details tends to be unproblematic, since bracketed details do not refer to any world. Readers may regard some of the details of *Wolf Hall* as fictional and unsure about them regard those details apparently about Cromwell as bracketed. Readers may regard some details of *A Million Little Pieces* as detailing Frey's actual experiences and others as similarly bracketed.

Second, regarding diegeses as combining correct and incorrect factual details also tends to be unproblematic. Factual details report on the actual, or actually factual, world. Though incorrect factual details report correctly on a merely possible, or possibly factual, world, this reporting is merely indirect. Reading Le Verrier's letter about Vulcan as factual involves reading it as reporting directly on one world, partly correctly and partly incorrectly. It reports correctly that the earth exists and incorrectly that Vulcan does. That implies that the earth and Vulcan cannot interact, which is just as hoped, since they would not be expected to do so.

Third, regarding diegeses as combining mimetic and non-mimetic fictional details tends to be unproblematic too. Fictional details apply to the actual, or actually factual, world. If *The Republic* is read as a fictional diegesis, then some of its details may be read as applying mimetically and some non-mimetically. A reader may regard events detailed in the dialogue as entirely invented and so non-mimetic, while simultaneously regarding some of the philosophical propositions—the existence of Forms, say, supposing that she thinks that the Forms exist in the actual, or actually factual, world—as mimetic. Like reporting, applying is of diegeses in toto, but mimetic/non-mimetic applying and correct/incorrect reporting can be asked of specific diegetic details.

And fourth, regarding diegeses as combining fictional and factual details does tend to be problematic. This fourth case divides in three.

Consider the case of a diegesis with a preponderance of fictional details. As we read it, the 1937 edition of *The Hobbit* contains the detail that Bilbo, an individual in a merely possible, or actually fictional, world, encounters men. Suppose that this and a preponderance of its other details are read as fictional. Suppose however that the men with whom Bilbo interacts are regarded as individuals in the actual, or actually factual, world. Bilbo then could not interact with them because he and they exist in different worlds, though he is identified as doing so. To avoid such diegetic incoherence, most read the 1937 edition as fiction in toto. One way of explaining this is by adopting Kroon's (1994, 210–13) strategy and read 'men' in the 1937 edition as really referring to the counterpart in Lewis's technical sense (1973/2001, 40) of men.²⁰ 'Men' in the 1937 edition really refers to those individuals most similar to men in the actual world. So the 1937 edition refers to all and only fictional individuals, objections, and events. Hence, in our terms, when the 1937 edition appears to refer to the actual, or actually factual, ones, it really refers to their merely possible, or actually fictional, counterparts.

Consider a case with a preponderance of factual details. On 28 October 2004 Peter Brown, Thomas Sutikna, Michael J. Morwood, et al. published "A new small-bodied hominin from the Late Pleistocene of Flores, Indonesia" in *Nature*. As we read it, the article details features of *Homo floresiensis*,²¹ an actual, or actually factual, species of hominin averaging about one meter tall. Researchers came to call the members of the species "hobbits,"²² and in 2007 Mike Morwood, one of the authors of the 2004 article, and Penny Van Oosterzee published *The Discovery of the Hobbit: The Scientific Breakthrough that Changed the Face of Human History*. As we read it, *The Discovery of the Hobbit* contains details about *Homo floresiensis* and its discovery—an individual species and an event in the actual, or actually factual, world, respectively. Suppose however that whenever an individual member of *Homo floresiensis* is called a 'hobbit', individuals of the species are regarded as existing in a merely possible, or actually fictional, world—the world of Middle-earth. *Homo floresiensis* sometimes would and sometimes would not be a factual, or actually factual, species. Its individuals could only sometimes interact with other actual, or actually factual, species—such as the actual, or actually factual, flora and fauna also detailed in *The Discovery of the Hobbit*—even though they are detailed as doing so all the time. Worse, individual members of *Homo floresiensis* could only sometimes interact with each other, since some of them would exist in a merely possible, or actually fictional, world. To avoid such diegetic incoherence, most read *The Discovery of the Hobbit* as fact in toto. We suggest reversing Kroon's strategy as a way of doing so. We might take 'hobbit' to refer to actual, or actually factual, counterpart of hobbits—themselves merely possible, or actually fictional, individuals. And the actual, or actually factual, counterparts could turn

out to be members of Homo florensiesis—or so *The Discovery of the Hobbit* could be read as maintaining.

Finally, consider a case with no preponderance of fictional or factual details. Perhaps alleged memoirs more egregiously fictionalized than Frey's *A Million Little Pieces* count. Readers would regard no preponderance of its individuals, objects, or events being able to interact—even though they are detailed as doing so at least sometimes. To avoid such extreme diegetic incoherence, it is often better to read the discourse either in toto as factual, fictional, or bracketed, or to contain a preponderance of details that are factual or fictional and perhaps appeal to counterparts to explain interactions between the rest.

There may however be times where such incoherence is desirable. Examples of metafiction include novels that directly refer to both the merely possible, or actually fictional, world of their individuals, objects, and events, and the actual, or actually factual, world of their authors and readers. Kurt Vonnegut writes in his novel *Breakfast of Champions*:

I do not know who invented the body bag. I do know who invented Kilgore Trout. I did.

I made him snaggle-toothed. I gave him hair, but turned it white. I wouldn't let him comb it or go to a barber. I made him grow it long and tangled.

I gave him the same legs the Creator of the Universe gave to my father when my father was a pitiful old man. They were pale white broomsticks. They were hairless. They were embossed fantastically with varicose veins.

And, two months after Trout received his first fan letter, I had him find in his mailbox an invitation to be a speaker at an arts festival in the American Middle West.

* * *

The letter was from the Festival's chairman, Fred T. Barry. He was respectful, almost reverent about Kilgore Trout. He beseeched him to be one of several distinguished out-of-town participants in the Festival, which would last for five days. It would celebrate the opening of the Mildred Barry Memorial Center for the Arts in Midland City.

The letter did not say so, but Mildred Barry was the late mother of the Chairman, the wealthiest man in Midland City. Fred T. Barry had paid for the new Center of the Arts, which was a translucent sphere on stilts. It had no windows. When illuminated inside at night, it resembled a harvest moon.

(1973/1999, 32)

Readers of *Breakfast of Champions* may find its lack of a preponderance of fictional or factual details not problematic but positive, encouraging them in each instance to ponder which world is being detailed.

Objection 2

Revising Fiction, Fact, and Faith: A Philosophical Account, which we have written and is now being read, mentions ‘Bilbo’, ‘the earth’, and ‘Vulcan’. It can therefore be read as some combination of fiction, correct fact, and incorrect fact, respectively. It may also be read as sometimes referring to bracketed details and other times not. So it is unclear whether the diegesis or any of its details is fiction, incorrect or correct fact, or bracketed. This objection, like the previous one, concerns combinations. Since *Revising Fiction, Fact, and Faith* is a diegesis concerning philosophy, analyzing it potentially analyzes philosophy per se. Is philosophy detailed in fictional, factual, or bracketed, diegeses, some combination of these, or none of these at all?

There is reason to read *Revising Fiction, Fact, and Faith* particularly as fact in toto—we leave to the reader to determine the extent to which it is correct—because only then does it detail fiction, fact, and faith, and their revision in toto in the actual, or actually factual, world. The categories of fiction, fact, and faith are themselves regarded as factual. If *Revising Fiction, Fact, and Faith* is read as fiction in toto or otherwise, then it details all or some of those in a merely possible, or actually fictional, world. Those categories could themselves be regarded as wholly or partly fictional. If *Revising Fiction, Fact, and Faith* is read as bracketed in toto or otherwise, then it does not detail all or some of those in any world. Those categories could themselves be regarded wholly or partly as neither factual nor fictional.

Because philosophers are often concerned with the actual, or actually factual, world, that is how they often read each other’s discourses. Even philosophers concerned with idealized theories, such as in ethics or the sciences, and with abstracta or possibilia generally, are often concerned with them insofar as they relate to or have explanatory value in the actual, or actually factual, world. Admittedly, some philosophers are self-professed “fictionalists” about these or other posits. While one might think that this means that they read certain discourses as referring to some merely possible, or actually fictional, world of fully rational agents, say, or numbers or merely possible worlds, it may be better to think of them as bracketing details regarding such individual, objects, and events.²³ “Fictionalists” may bracket whether fully rational agents, numbers, or mere possibilia exist one way or another. They might be concerned with the structure of the theories in which they are detailed instead. That structure includes such things as style (how clear the theory’s appeal to them and how parsimonious their place in it are) and plot (how explanatory the theory’s appeal to them is and where their place in the system leads). “Formalists” are perhaps more clearly named, as they may regard such things as abstracta and possibilia purely formally, i.e., purely in terms of structure, bracketing all concerns about whether they are factual or fictional. Perhaps discourses read as works in formal areas

of philosophy, including logic and set theory, are often read as bracketed diegeses in toto.

Objection 3

Different readers may read the same discourse as different diegetic-revisionary, diegetic auxiliary, and diegetic kinds. Those diegeses would then be those kinds. Focusing on the last, this can make the same discourse fact for one community and fiction for another. This is so not only for Richard Adams Locke's "Great Astronomical Discoveries" but also for any discourse. Tolkien's discourses could be read as factual by a community unaware or ignoring that this is merely Tolkien's literary conceit. Conversely, Ptolemy's *Almagest*, though we gave reasons that it is normally read as factual, because it ascribes to the sun a geocentric orbit could be read as fictional by a community unaware or ignoring the history of astronomical development. And one might object that such diegetic relativism is problematic. There are three replies.

First, diegetic relativism does not entail metaphysical relativism about the actual world. On the contrary, a kind of metaphysical realism follows from it. Discourses are read as different diegeses by different communities of readers because these communities are reading the same actual discourses in the same actual, or actually factual, world. Those discourses, as part of that world, are themselves real, existing independently of us once created.

Second, in Strawson's (2005) sense of descriptive metaphysics, here of our revisionary practices, diegetic relativism is undeniable for diegetic-revisionary, diegetic auxiliary, and diegetic kinds, respectively. For some readers, the 1937 edition of *The Hobbit* is retconned by *The Lord of the Rings*, while, for holdouts, it is not. For some readers, the 1951 edition of *The Hobbit* is a reconstruction of the 1937 edition as retconned by *The Lord of the Rings*, while, for holdouts against the retcon, it is not. And, for some readers, the 1937 edition of *The Hobbit* is fiction, while, for others, it might be fact. Diegetic relativism also explains particular episodes in the history of scientific development, as explained in Chapters 5 and 6, and in the history of religious development, as explained in Chapter 7. Because we are loosely engaging in descriptive metaphysics, we should accommodate diegetic relativism in our explanations.

And third, there are reasons to prefer some readings of discourses to others. Though the author's reading of a discourse is not definitive of the resulting diegesis, the author remains an especially well-informed reader, to whom others might defer. Though the 1937 edition of *The Hobbit* could be read as fact, Tolkien himself—notwithstanding his conceit—read it as fiction. Putnam (1973/2008) proposed a division of linguistic labor, according to which some members of linguistic communities when using a term on whose referent they are not expert implicitly defer to

other members who are. Something similar may happen here. Though Ptolemy's *Almagest* and Copernicus's *De Revolutionibus* could be read as fiction, members of the astronomical community, we explained, should read them as incorrect fact. Non-experts could then defer. Henceforth we ourselves defer by assuming that the diegetic kind most if not all (including authors and community experts) read a discourse as is its kind.

Notes

1. Tolkien clarifies in a letter to his American publisher in 1955 that 'Middle-earth' "is just a use of Middle English *middel-erde* (or *erthe*), altered from Old English *Middangeard*: the name for the inhabited lands of Men 'between the seas'. And though I have not attempted to relate the shape of the mountains and land-masses to what geologists may say or surmise about the nearer past, imaginatively this 'history' is supposed to take place in a period of the actual Old World of this planet" (1995, 220).
2. As explained below, it also has no "men" of the sort existing in Middle-earth.
3. Edgar Allan Poe, who wrote his own moon hoax that same summer, claimed to have read the article as fiction throughout because of the misfit between its diegetic details and actual, or actually factual, worldly ones: "The moon's distance from the earth is, in round numbers, 240,000 miles. If we wish to ascertain how near, apparently, a lens will bring the satellite, we have but to divide the distance by the magnifying or, more strictly, by the space-penetrating power of the glass. Mr Locke gives his lens a power of 42,000 times. By this number divide 240,000, the moon's real distance; and, as the apparent distance, we have five miles and five sevenths. No animal whatever could be seen so far—much less the minute points particularized in the story—such as the flowers of the *papaver Rheas*" (Poe 1848/2008, 94).
4. Brown had already led teams that discovered others, including Sedna in 2003 and Makemake in 2005, and would discover Haumea in 2008.
5. Tombaugh sent the telegraph on 13 March. On 1 May Tombaugh and his colleagues at the Lowell Observatory named it 'Pluto', a suggestion made by Venetia Burney, an 11-year-old English girl. The first two letters of 'Pluto' were also the initials of Percival Lowell, who not only founded the observatory but also had predicted the existence of a trans-Neptunian planet.
6. See Brown (2010) for a popular account of his role. Will Grundy, also of the Lowell Observatory, rejecting the IAU's resolution and Pluto's demotion, has urged the astronomical community to do the same (Yeager 2017). Grundy is a Pluto-as-a-planet holdout.
7. Kripke himself notes that rather than initially having being seen, ostensibly, "through a telescope," Neptune was "hypothesized as the planet which caused such and such discrepancies in the orbits of certain other planets" (1970/2005, 79, n. 33).
8. The letter and Faye's reply were published in *Comptes Rendus*, which Lescarbault read. English translations appeared in the April 1860 issue of *The Mathematical Monthly*.
9. See note 8.
10. Le Verrier visited Lescarbault to study his records. "The New Planet," an article detailing what Le Verrier found, appeared in the *Friends' Review: A Religious, Literary and Miscellaneous Journal* the following March: "It was on a white-wood plank, which fortunately had not been planed off, that M. Le Verrier found the first observation of a planet, with an estimated

diameter of about one-quarter of that of Mercury, and much more important in weight, if not in bulk, than any of the 57 planets which inhabit the void between Mars and Jupiter. M. Lescarbault's planet requires about three weeks for its revolution about the sun, while the period of Mercury is about three months" (Enoch 1860a, 411). The journal repeated the prediction two weeks later in the article "Two New Planets," which summarized Lescarbault's findings and Le Verrier's "full conviction that the observations may be relied upon," before adding that "Benjamin Scott, of London, stated recently that in midsummer 1847, he . . . saw on the sun's disc a well-defined black spot" whose "angular diameter appeared as large as that of Venus" (Enoch 1860b).

11. According to historian J. Donald Fernie, Le Verrier "was for the rest of his life deluged with reports from around the world announcing observations of Vulcan . . . by inexperienced people who were confused by sunspots" (1994, 414). *Zion's Herald* included one such "Astronomical Notice" in October 1876: "Seventeen years have since passed away, in which nothing has been seen of Vulcan. But now three European astronomers—Schmidt, Wolf and Weber—have noticed the transit over the sun of a small black point, and have thus apparently confirmed Lescarbault's observations. . . . M. Le Verrier has announced that it will next be seen this month."
12. See N.T. Roseveare (1982) for scientists' understanding of Mercury's perihelion from Le Verrier to Einstein. While the hunt for Vulcan has ceased, the hunt for other planets has not. In 2016 Brown joined Konstanin Batygin in publishing "Evidence for a Distant Giant Planet in the Solar System" in *The Astronomical Journal* (151:22). Brown and Batygin, like Le Verrier, calculated that only a planet could account for the observed behavior of other objects. Particularly, Brown and Batygin maintained that only a distant giant planet, satisfying the IAU's 2006 definition, could explain the slight tilt of the orbits of *all* the other planets in the solar system. They tentatively named their proposed planet 'Planet Nine'. Comparisons to Le Verrier's proposed planet Neptune were not lost on them. "A New Planet of a Red Herring," published in 2016 in *The Atlantic*, reported: "The astronomers' task was, Batygin says, 'qualitatively the same' as the one Le Verrier solved, 'an attempt to reproduce the orbit of an unseen planet deduced solely by its gravitational effects on other objects'" (Levenson 2016). Batygin and Brown are also aware that, while Le Verrier was right about Neptune, he was wrong about Vulcan. "Until Planet Nine is caught on camera," Batygin explained in *The Atlantic*, "it does not count as being real." In our terms it would not be factual.
13. Lewis offers two ways to handle Watson's wound. First, "go from the original impossible [i.e., inconsistent] fiction to the several possible revised versions that stay closest to the original. Then say that what is true in the original is what is true, according to one of our analyses of non-vacuous truth in fiction, in all of these revised versions" (275). Because different revised versions place the wound in different locations, it is not true that it is in any of these locations. Lewis called this the "*method of intersection*: f is true in the original fiction iff f is true in every fragment" (277). Lewis came to "favor instead" a second way, "this *method of union*: f is true in the original fiction iff f is true in some fragment." Though different revised versions place the wound in different locations, it is true that it is in only one of them.
14. See Elizabeth Asmis (1992/2006) for discussion of Plato on mimesis and its relation to diegesis, and Jonathan Barnes (1995, 272–76) for discussion of Aristotle on mimesis and its relation to Plato on the same.
15. Mimetic applicability is something like what Tolkien had in mind when he wrote in the Foreword to *The Lord of the Rings*: "But I cordially dislike

- allegory in all its manifestations, and always have done so since I grew old and wary enough to detect its presence. I much prefer history, true or feigned, with its varied applicability to the thought and experience of readers" (1954–55/1994, 5).
16. "The principal difference between myth and fiction," Salmon explains, "is that a myth is believed whereas with fiction there is typically only a pretense" (1998, 305). In our terms, a myth is believed because it is detailed in a discourse read as a factual diegesis. In Salmon's terms, with fiction there is only pretense because, in our terms, a fictional discourse is not read as reporting on the actual, or actually factual, world.
 17. Cf. Salmon (1998, 305).
 18. Though he means it negatively while we are neutral, a bracketed diegesis approximates Harry Frankfurt's (2005) analysis of bullshit. Frankfurt imagines a case in which "a Fourth of July orator . . . goes on bombastically about 'our great and blessed country, whose Founding-Fathers under divine guidance created a new beginning for mankind'" (2005, 16). While one might read—and we take listening to be an auditory kind of reading—the oration as fact or fiction, Frankfurt argues that for the orator herself it "is grounded neither in a belief that it is true nor, as a lie must be, in a belief that it is not true. It is just this lack of connection to a concern with truth—this indifference to how things really are—that [is] the essence of bullshit" (33). In our terms, "[i]ndifference to how things really are" amounts to indifference to whether or not the oration's secondary world differs from the primary world.
 19. Though Lamarque and Olsen, and Stroll and Martinich (all of whom we discussed in the previous chapter) are in a sense "bracketing" truth, they nevertheless are doing so as part of an analysis of fiction. Some deny the distinction between fiction and fact altogether. Hayden White (1973; 1978; 1998) has denied that history, otherwise detailed in fact, differs from fiction. As we would put his point, discourses read as fact connect individuals, objects, and events narratively just as much as discourses read as fiction do. As we would argue contra White, fiction refers to individuals, objects, and events in a merely possible, or actually fictional, world, while fact refers to such items in the actual, or actually factual, world. Richard Rorty (1982) has denied that fact differs from fiction generally. Our argument contra White applies here too.
 20. "Something has for *counterparts* at a given world those things existing there that resemble it closely enough in important respects of intrinsic quality and extrinsic relations, and that resemble it no less closely than do other things existing there." (Lewis 1973/2001, 40).
 21. While it is scientific convention to italicize genera and species names, out of discursive consistency with what comes later we do not do so except when italicized in direct quotations.
 22. Though "hobbit" does not appear in the original article, it does in subsequent articles and elsewhere in *Nature*. See www.nature.com/collections/baiecchdeh (accessed 1 February 2020).
 23. Anti-realists may be fictionalists. When, as explained in Chapter 3, Kripke (1970/2005) maintains that merely possible worlds do not exist, he is maintaining that they are merely metaphorical, which may be one way of understanding their being fictional.

5 Considering Kuhn

In Chapter 1 we examined the history of revision of Tolkien's discourses read as diegeses concerning Bilbo Baggins—or “the history of Bilbo's diegetic revision.” We developed the philosophy of that history in Chapter 2 by explaining that revision via semantic dualism and in Chapter 3 by categorizing Bilbo as a merely possible, or actually fictional, individual via our metaphysical foundations. Having in Chapter 4 expanded those foundations to categorize objects as fictional, correctly factual, and incorrectly factual planets, here we demonstrate that the diegetic-revisionary kinds presented via analyzing fictional diegeses of fantasy literature apply equally to factual diegeses of scientific disciplines. We demonstrate this by bringing our overall account into dialogue with perhaps the most influential philosopher and historian of science of the last half century, Thomas Kuhn.

“History, if viewed as a repository for more than anecdote or chronology, could produce a decisive transformation in the image of science by which we are now possessed” (1970/2012, 1), Kuhn began his magnum opus, *The Structure of Scientific Revolutions*, or “*Structure*.” Published in 1962 and republished with a postscript eight years later, *Structure* was not only foundational to the history and philosophy of science, its explicit subjects, but also influential in economics, literary criticism, political science, and sociology. Having sold more than one million copies, *Structure* is likely the most popular work of philosophy of the twentieth and twenty-first centuries.¹ *Structure* and Kuhn's later publications, especially his 2002 *The Road Since Structure*,² still inspire philosophical scholarship.³ There are two reasons that we bring our account into dialogue with it.

First, similarities between Kuhn's view and ours are mutually illuminating. Kuhn identified himself as “a physicist who became a historian of science for philosophical purposes.”⁴ He did so by tracing the history of scientific development in terms of the history of diegetic revision, as explained below. Limiting himself to those factual diegeses concerning the empirical sciences, Kuhn's examples included Aristotle's *Physics*, Ptolemy's *Almagest*, Newton's *Principia* and *Opticks*, Benjamin Franklin's

Electricity, Antoine Lavoisier's *Chemistry*, and Charles Lyell's *Geology* (Kuhn 1970/2012, 10). He could have added articles (e.g., the one announcing the discovery of *Homo florensis*), letters (e.g., Le Verrier's about Neptune and Vulcan), and textbooks (about which we say much later). Considering Kuhn's and our views in dialogue fleshes out ours while clarifying his.

Second, differences between Kuhn's view and ours are likewise illuminating. The image of science by which we are now possessed, according to Kuhn, is one in which the history of scientific development is always cumulative. The decisive transformation that Kuhn hoped to produce by philosophically analyzing the history of such development is one according to which that history is sometimes non-cumulative. Kuhn's analysis of cumulative and non-cumulative development is related to our analysis of linear (in retcons and expansions) and non-linear (in reboots and holdouts) revision. All cumulative developments are instances of linear revision. Only a discursively later diegesis that continues a discursively earlier one by expanding the worldly details on which it reports adds cumulatively to the earlier diegesis. Kuhn's analysis is distinct from ours because he fails to recognize that only some non-cumulative developments are instances of non-linear revision. A discursively later diegesis that reboots a discursively earlier one by rejecting the world on which the earlier one reports, and a discursively earlier diegesis that is a hold-out against a discursively later one by rejecting the world on which the later one reports, both relate non-cumulatively to each earlier diegesis. Kuhn recognizes these. Other non-cumulative developments however are instances of linear revision. A discursively later diegesis that retcons a discursively earlier one by reinterpreting the worldly details on which it reports adds to that diegesis non-cumulatively. Kuhn does not recognize those. Hence our disagreement with Kuhn involves retconning. Failing to distinguish cumulativity from linearity, Kuhn thinks that all non-cumulative development involves reboots, when they can—and, as explained, in the history of scientific development do—instead involve retcons. And—as also explained—that is reason to prefer our view.⁵

Normal and Revolutionary Science

Kuhn distinguished normal from revolutionary science, which he correlated with cumulative and non-cumulative development, respectively, in the history of science. Otherwise agreeing with Kuhn's distinction and correlation, we nevertheless disagree that revolutionary science is non-cumulative. That is because we recognize retcons. We begin with Kuhn's terms and turn to his examples to explain this.

According to Kuhn, normal science is cumulative because it involves "research firmly based upon one or more past scientific achievements, achievements that some particular scientific community acknowledges for a

time as supplying the foundation for its further practice” (1970/2012, 10). Those achievements are paradigms. Though Kuhn introduces ‘paradigm’ into common usage, he equivocates on its meaning.⁶ Generally, however, for Kuhn, a paradigm is a set of shared examples embodying problems, solutions, methods, and values around which a scientific community coalesces.

Revolutionary science is non-cumulative because the community is conflicted on which paradigm to accept. Scientific revolutions, the successful outcomes of revolutionary science, are “those non-cumulative developmental episodes in which an older paradigm is replaced in whole or in part by an incompatible new one” (1970/2012, 92). Though we disagree, according to Kuhn, when a post-revolutionary paradigm replaces the pre-revolutionary one, the scientific field experiencing the “paradigm shift” restarts. While proponents of the post-revolutionary paradigm try to assimilate as much of the pre-revolutionary one as possible, the paradigms nevertheless remain “logically incompatible. In the process of being assimilated, the second must displace the first” (97). More strikingly, the post-revolutionary paradigm causes “destructive beliefs about nature” (98). By ‘nature’ Kuhn means the actual, or actually factual, world. Beliefs about that world are destroyed and begun anew. Kuhn thinks that something similar may be said of the world itself (110–11), as explained below. Finally, according to Kuhn, “the successive transition from one paradigm to another via revolution is the usual developmental pattern of mature science” (12). It would then be the usual revisionary pattern of factual diegeses central to mature science.

To analyze this revisionary pattern, we consider two of Kuhn’s examples of the history of scientific development and so diegetic revision. The first, concerning the early twentieth-century revolution in dynamics, is the best worked-out example in *Structure* (1970/2012, 98–103). The second, concerning a further episode of the plurality of planetary objects discussed in the previous chapter, becomes central to Kuhn’s later writing (2002, 15, 94). Each of Kuhn’s examples is non-cumulative and non-linear. Though the term was not available to him, Kuhn models scientific revision on reboots. We then consider modeling revolutions on retcons. Doing so permits combining Kuhn’s examples with Le Verrier’s proposed discoveries of Neptune and Vulcan from the previous chapter to demonstrate how the history of dynamics and astronomy converge—and why we should therefore model scientific revolutions on retcons. Scientific revolutions, we explain, though non-cumulative, are nevertheless linear—a possibility that Kuhn lacked the conceptual resources to consider.

From Newton to Einstein

By the twentieth century, “Newtonian dynamics,” as Kuhn called it, had been the discipline’s paradigm for centuries. We could date its start to 1687, when Newton published his *Philosophiae Naturalis Principia*

Mathematica (*Mathematical Principles of Natural Philosophy*), or “*Principia*.” Newtonian dynamics includes Newton’s three laws of motion. On one articulation of the second law, an object’s force equals its mass times acceleration: $F = ma$. After centuries of cumulative development, in the twentieth century Newtonian dynamics succumbed to a revolution at the hands of “Einsteinian dynamics,” by which Kuhn meant here Einstein’s theory of special relativity. Einstein published the foundations of special relativity in “Zur Elektrodynamik bewegter Körper” (“On the Electrodynamics of Moving Bodies”) in *Annalen der Physik* in 1905. Later that year and in the same journal he published “Ist die Trägheit eines Körpers von seinem Energieinhalt abhängig?” (“Does the Inertia of a Body Depend upon Its Energy Content?”), which proposed a version of $E = mc^2$. An object’s energy equals its mass times the speed of light squared.⁷

The image of science by which we are now possessed, according to Kuhn, would maintain that Einsteinian dynamics was a cumulative development of Newtonian dynamics. Newtonian dynamics gives results that better approximate those of Einsteinian dynamics the lower the relative velocities of the objects considered. Einstein improved upon Newton’s theory by showing how it could be expanded to all cases, including those of objects with velocities approaching the speed of light. “But,” Kuhn contends,

the physical referents of these Einsteinian concepts are by no means identical with those of the Newtonian concepts that bear the same name. (Newtonian mass is conserved; Einsteinian is convertible with energy. Only at low relative velocities may the two be measured in the same way, and even then they must not be conceived to be the same.)
(1970/2012, 102)

This would also be so of the referents of Einsteinian and Newtonian terms, such as Einsteinian ‘mass’ and Newtonian ‘mass’. Einsteinian mass and Newtonian mass are different quantities and in a loose sense different objects (or properties of objects), even though their names are homonyms. Hence, Kuhn concludes, contra our now-possessed image, the development from Newtonian to Einsteinian dynamics was non-cumulative. The physics community’s rejection of Newtonian concepts and terms in favor of Einsteinian ones marked a revolution.

Kuhn took his “revolution” talk seriously, comparing extreme changes in science with those in politics. In science changes might even be more extreme:

[T]he historian of science may be tempted to exclaim that when paradigms change, the world itself changes with them. . . . In so far as their only recourse to that world is through what they see and do, we may want to say that after a revolution scientists are responding to a different world.

(1970/2012, 111)

Though Kuhn prefaced this by saying that “[o]f course, nothing of quite this sort does occur” (111), we may be tempted to say that those accepting Einsteinian dynamics are responding to a different world. Newtonians respond to a world in which mass is conserved, while Einsteinians respond to one in which a different quantity with the same name is not conserved. There is “a sense in which [paradigms] are constitutive of nature” (110). There is then a sense in which different paradigms are constitutive of different natures or different worlds. Newtonians live in one, Einsteinians another. Because these are actual scientists, these would be different actual worlds. Because Newton’s *Principia* and Einstein’s articles are read as factual diegeses, these would be different actual, or actually factual, ones.

While “we may want to say that after a revolution, scientists are responding to a different world,” presumably we need not say it. After *Structure*, Kuhn (2002, essays 1–4, 11) spoke not of “paradigms” but of “lexica” providing different “taxonomies” of *the* world, the one and only actual. Yet Kuhn did so by comparing lexica to “the Kantian categories” (104). For Kant, the categories are concepts constitutive of the empirically real world, or the world of human experience.⁸

Like the Kantian categories, the lexicon supplies preconditions of possible experience. But lexical categories, unlike their Kantian forebears, can and do change, both with time and with the passage from one community to another.

Because different communities have different experiences, necessarily constituted by different lexica, their empirically real world changes. For Kuhn, a world that so changes would be *an* empirically real world in something like Kant’s sense. While Kant believed that there is only one such world, Kuhn believed that there are many—each empirically real.⁹ Moreover, because Kant’s empirical realism concerned the actual world, on his Kantian self-interpretation Kuhn is committed to there being more than one actual world. Kuhn even entitled the unpublished text on which he was working at the time of his death *The Plurality of Worlds* (Hoyningen-Huene 2015, 185). Since, for him, neither the Newtonian nor the Einsteinian lives in a merely possible world, the plurality would be of actual ones.

Yet there is only one actual world. Fortunately Kuhn’s claims can be understood consistently with this. When he asked, “Can a world that alters with time and from one community to the next correspond to what is generally referred to as ‘the real world?’” he answered: “I do not see how its right to that title can be denied” (2002, 102). So phrased, there is not a plurality of actual, or actually factual, worlds in any absolute sense. Given the communal nature of paradigms and therefore of the worlds that they constitute, there are *no* worlds in any absolute sense. The actual, or actually factual, world for Newtonians is one in which mass is conserved. The actual, or actually factual, world for Einsteinians is one in which a different quantity with the same name is not. During

the revolution, physicists replaced one of these worlds with another—as their community changed from Newtonian to Einsteinian. Each community has only one actual, or actually factual, world relative to it.¹⁰

Such talk of “displacing” (and so replacing) worlds, especially in the context of the history of scientific development understood in terms of the history of diegetic revision, should sound familiar. We have all the elements of a reboot. Newton’s *Principia* is the rebooted diegesis, while Einstein’s articles are parts of a larger rebooting diegesis.¹¹ Rather than a reboot in fiction, it is one in fact:

- (1) Newton’s *Principia* is a discursively earlier diegesis constituted when an earlier discourse is read. Einstein’s articles are collectively a discursively later diegesis constituted by later discourses when read.
- (2) Newton’s *Principia* and Einstein’s articles refer to different worlds, the former of which is rejected. In the former mass is conserved while in the latter it is not conserved but equals energy divided by the speed of light squared.
- (3) Einstein’s articles allude to details from Newton’s *Principia* in such a way that a reader experiences those details as repetitions. Though Einsteinian mass is unconserved, it alludes to Newtonian mass as a quantity related to acceleration and force, even if not being exactly equivalent to their product. And a reader experiences those details as having previously occurred.
- (4) Despite Einstein’s articles being allusive, because the Einsteinian paradigm replaced the Newtonian paradigm and the world to which it referred, individuals, objects, and events in the world to which Einstein’s articles, and those to which Newton’s *Principia*, refer, cannot interact. Einsteinian mass cannot be converted into Newtonian energy because they exist in different worlds. There is even a sense in which Einsteinians, individuals from the world to which Einstein’s articles refer, cannot be aware of anything distinct about the world to which Newton’s *Principia* refers. Einsteinian and Newtonian scientists themselves, as Kuhn comes to say of pre- and post-revolutionary scientists generally, “are therefore unable to communicate all of their experiences” (2002, 101). Though Kuhn acknowledged that these scientists “may belong to several inter-related communities (thus, be multilinguals),” and in that sense refer to different actual, or actually factual, worlds, “they experience aspects of the world differently as they move from one to the next.”

Kuhn even appealed to descriptivism to explain his reboot. We have taken descriptivism as this:

- (a) **Reference:** A proper name refers indirectly to its referent through the mediation of its associated descriptions.
- (b) **Meaning:** The meaning of a proper name is exhausted by its associated descriptions.

As explained in Chapter 2, Kripke (1970/2005) treats natural-kind terms as proper names for their kind. Putnam (1973/2008) does likewise, and so do we. Just as ‘Bilbo’ names the hobbit that is Bilbo, ‘gold’ names the type, or kind (of element), that is gold. ‘Mass’ likewise names the type, or kind (of quantity), that is mass. According to Kuhn, part of the meaning of ‘mass’ for the Newtonian is that it is conserved and so inconvertible to energy. Part of the meaning of ‘mass’ for the Einsteinian is that it is convertible with energy and so unconserved. Kuhn maintained that these descriptions determine each one’s referent: “the physical referents of these Einsteinian concepts are by no means identical with those of the Newtonian concepts that bear the same name” (1970/2012, 102). Of the same example, Kuhn later writes: “In order to make or to assimilate such a discovery [as Einstein’s] one must alter the way one thinks about and describes some range of natural phenomena” (2002, 14–15). The way one thinks about and describes such a range mediates between one’s terms and their referent. “The discovery . . . of Newton’s second law is of this sort. The concepts of force and mass deployed in that law differed from those in use before the law was introduced, and the law itself was essential to their definition” (15). Concepts just are how we think about things and so are the mental correlates of linguistic descriptions. And the concepts are not just different but also contradictory. Changing descriptions changes referents and ultimately worlds.

Finally, though Kuhn did not consider this, any diegesis that does not report fully correctly on one world reports fully correctly on another world once modally removed. The latter world is how the actual world might be but is not. Once the scientific community accepts Einstein’s articles and that the world on which they report is actual, or actually factual (relative to the scientific community), it rejects Newton’s *Principia* and the world on which it reports as merely possible, or possibly factual (relative to the same community). The latter world is a way in which the actual, or actually factual, world would be were the *Principia* to report correctly on it even though it does not. Hence Kuhn can maintain that “after a revolution, scientists are responding to a different world” without requiring “a world that alters with time and from one community to the next.” The Newtonian and Einsteinian worlds do not alter. Scientists alter which community and with it which world they regard as actual, or actually factual.

From Ptolemy to Copernicus

Kuhn mentioned our second example of the history of scientific development, and so diegetic revision, repeatedly in *Structure*¹² and explored it historically in his first book (1957/1992). He developed it philosophically later (2002, 15, 94).

As explained in the previous chapter, in 2006 in its “Resolution B5” the IAU redefined ‘planet’, thereby recategorizing Pluto from planet to

dwarf planet. Yet the definition immediately prior to 2006 was not the first definition of ‘planet’. The IAU itself noted: “The word ‘planet’ originally described ‘wanderers’ that were known only as moving lights in the sky.” A later way to understand that “wandering” and “moving” was as orbiting or revolving. In c. 150 Ptolemy completed his *Almagest*, which described planets as revolving around the earth, while in 1543 Copernicus published his *De Revolutionibus*, which described planets not as revolving around the earth but instead as revolving around the sun. Our second example from Kuhn focuses on “the transition from Ptolemaic to Copernican astronomy” (Kuhn 2002, 15). Kuhn is clear that describing planets as revolving heliocentrically rather than geocentrically changed their categorization:

Before [the revolution] occurred, the sun and moon were planets, the earth was not. After it, the earth was a planet, like Mars and Jupiter; the sun was a star; and the moon was a new sort of body, a satellite.

Copernicus’s change in definitions was even more radical than the IAU’s.

[C]onsider the compound sentence, “In the Ptolemaic system planets revolve around the earth; in the Copernican they revolve around the sun.” Strictly construed, that sentence is incoherent. The first occurrence of the term ‘planet’ is Ptolemaic, the second Copernican. . . . For no univocal reading of the term ‘planet’ is the compound sentence true.

Kuhn is again assuming descriptivism. A referentialist, maintaining that the meaning of ‘planet’ just is the objects to which it directly refers—independent of whether described as revolving geocentrically or heliocentrically—would likewise maintain that there is already a univocal reading of the term. In the Ptolemaic system *those objects* revolve around the earth; in the Copernican *those same objects* revolve around the sun. Kuhn’s appeal in this context not to “paradigms” but to “lexical taxonomies” or “taxonomic categories” makes his descriptivism even more apparent. “What characterizes revolutions is, thus, change in several of the taxonomic categories prerequisite to scientific description and generalization” (2002, 30). Lexical taxonomies and categories in Kuhn’s sense are both descriptions of objects.

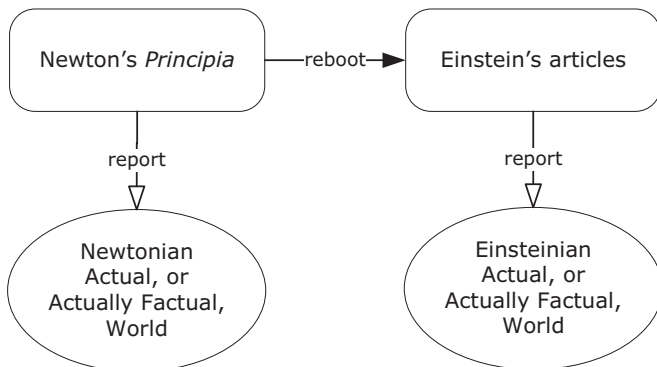
We again have in Kuhn’s discussion all the elements of a reboot applied to fact. Copernicus’s *De Revolutionibus* is the rebooting diegesis, while Ptolemy’s *Almagest* is the rebooted diegesis:

- (1) Ptolemy’s *Almagest* is a discursively earlier diegesis constituted when an earlier discourse is read. Copernicus’s *De Revolutionibus* is a discursively later diegesis constituted when a later discourse is read.

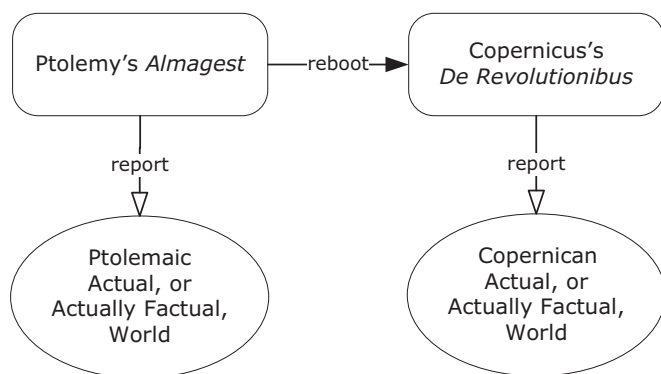
- (2) Ptolemy's *Almagest* and Copernicus's *De Revolutionibus* refer to different worlds, the former of which is rejected. In the former the sun is a planet, while in the latter it is not a planet but a star.
- (3) Copernicus's *De Revolutionibus* alludes to details from Ptolemy's *Almagest* in such a way that a reader experiences those details as repetitions. Though Copernican planets do not revolve around the earth, those planets—including Venus, Mars, Jupiter, and Saturn—allude to details about the Ptolemaic Venus, Mars, Jupiter, and Saturn, respectively, including that they are celestial bodies appearing according to the same predictions. And a reader experiences those details as having previously occurred.
- (4) Despite Copernicus's *De Revolutionibus* being allusive, because the Copernican paradigm replaced the Ptolemaic paradigm and the world to which it referred, individuals, objects, and events in the two worlds cannot interact. The Copernican Mars cannot revolve around the Ptolemaic earth because they exist in different worlds. Neither can Copernicans, individuals from the world to which *De Revolutionibus* refers, be aware of anything distinct about the world to which Ptolemy's *Almagest* refers. Further, 'In the Ptolemaic system planets revolve around the earth; in the Copernican they revolve around the sun', strictly construed, is incoherent.

We again have one actual, or actually factual, world, relative to each community. And again, insofar as Ptolemy's or Copernicus's diegesis reports incorrectly on one world, it reports correctly on a merely possible, or possibly factual, other world. Because the scientific community accepts Copernicus's *De Revolutionibus*, it rejects the *Almagest* by regarding it as reporting correctly on a merely possible, or possibly factual, world instead.

We may illustrate each revolution, understood as a diegetic revision, in terms of revision (as would be diagrammed in Chapter 1) and the world on which it reports (as would be diagrammed in Chapter 4).



and



Though we do not diagram this, the Newtonian actual, or actually factual, world, is an Einsteinian merely possible, or possibly factual, world, and vice versa. An analogous relation obtains between the Ptolemaic and Copernican.

From Revolutions to Textbooks

According to Kuhn, most individuals fail to notice anything like world changes, community-relative or otherwise. Revolutions are often “invisible” (1970/2012, chapter 11). That is because, Kuhn explained, the history of science, like the history of politics, is written—and indeed rewritten—by the victors. While on their own terms pre- and post-revolutionary scientific theories are non-cumulative—“we may want to say” that they refer to different worlds (at least for different communities)—scientific-revolutionary victors reconstruct the pre-revolutionary paradigm in terms that make it seem cumulative:

Partly by selection and partly by distortion, the scientists of earlier ages are implicitly represented as having worked upon the same set of fixed problems and in accordance with the same set of fixed canons that the most recent revolution in scientific theory and method has made seem scientific. No wonder that textbooks and the historical tradition they imply have to be rewritten after each scientific revolution. And no wonder that, as they are rewritten, science once again comes to seem largely cumulative.

(138)

Articles, letters, and textbooks may articulate paradigms. Today’s revolutionaries especially use the last to rewrite past paradigms in terms of

their present one to give theirs more credence. Textbooks then imply a historical tradition that is itself rewritten.

Kuhn did not hide how radical his view is:

Interestingly, these remarks will suggest that the member of a mature scientific community is, like the typical character of Orwell's *1984*, the victim of a history rewritten by the powers that be. Furthermore, that suggestion is not altogether inappropriate.

(167)

When they replace the old paradigm with their new one, the scientific powers rewrite textbooks and history of science books directly to make the history seem cumulative when it is not. The current paradigm then seems constitutive of the one and only "nature" and "world" because the previous paradigm and in that sense the nature and world of which it is constitutive has been replaced. Though members of a mature scientific community would be subject to such a rewritten history, the rewriting results in invisibility. It would not however be invisible to those resisting the rewrite. They would be aware of their victimhood, in our terms being holdouts, as explained below.

There are two reasons that, as we understand Kuhn, scientific textbooks are essential to such invisibility. First, textbooks are *reconstructions* in the sense introduced in Chapter 1 and discussed here. Second, they are *derivative diegeses* in the sense introduced later.

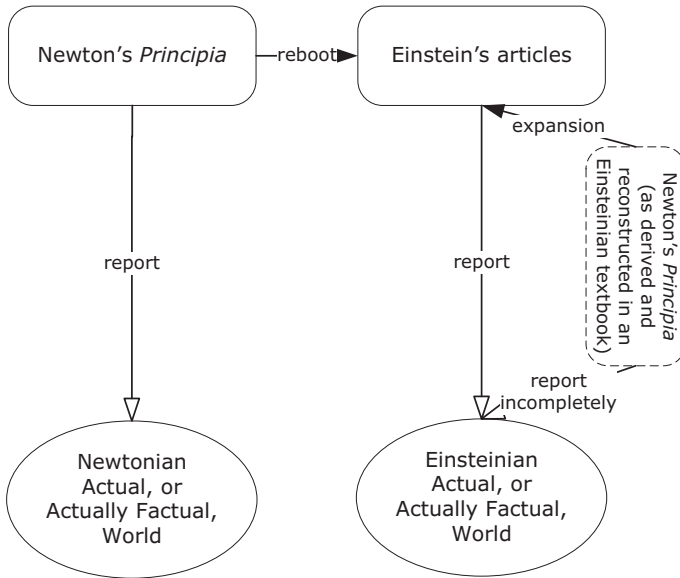
While Kuhn's talk of "displacing" (or "replacing") correlates with our "rebooting," his talk of "rewriting" correlates with our "reconstructing." A reconstruction is any third diegesis resulting from any first diegesis as revised by any second diegesis in a way that permits an expansion where there otherwise could be none. The 1951 edition of *The Hobbit* would be a reconstruction of the 1937 edition as retconned by *The Lord of the Rings*, if resulting from the diegetic resources of the retconned diegesis applied to the retconned diegesis. As a reconstruction, the 1951 edition tells "the true account" (1954–55/1994, 21) of Bilbo's encounter with Gollum, while the 1937 edition tells Bilbo's lie. The 1937 edition as reconstructed in the form of the 1951 edition is expanded by *The Lord of the Rings*, and all three diegeses refer to numerically identical individuals, objects, and events. Reconstructions can be of retcons or reboots but not expansions, since there an expansion is already possible. For Kuhn, textbooks are reconstructions of reboots. "Partly by selection and partly by distortion," in Orwellian spirit, the Einsteinian and Copernican victors of their respective revolutions "rewrite" the discourses of the vanquished as rebooted by their own.

Yet, unlike the 1951 edition of *The Hobbit* and the retconned 1937 edition, textbooks do not reconstruct diegeses in their entirety. Rather

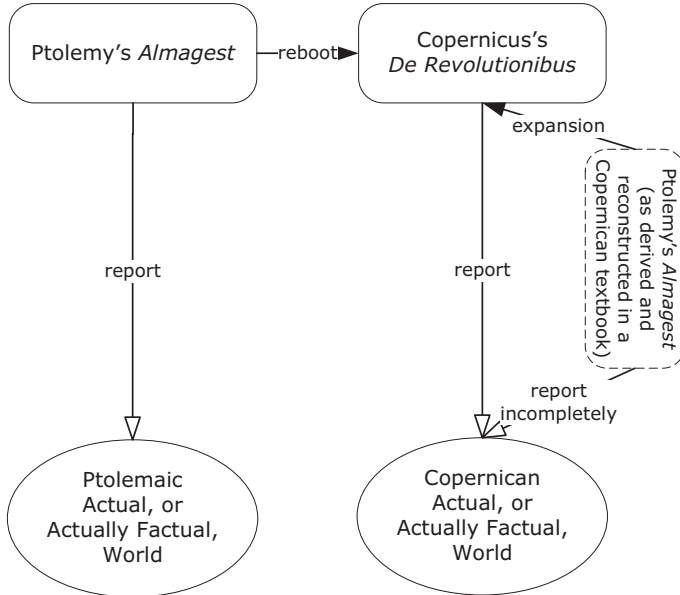
they summarize, simplify, and systematize those diegeses by putting their details into what for the requisite community becomes canonical form. Call a ‘derivative diegesis’ any diegesis that derives, or draws, its details from one or more diegeses as such. Like all summaries, simplifications, and systematizations, derivative diegeses may also inadvertently introduce changes.¹³ Textbooks generally are derivative diegeses, though our concern is with science textbooks specifically, and by ‘textbook’ we mean those. For Kuhn, such textbooks are both reconstructions and derivative diegeses. The 1951 edition is only a reconstruction, while synopses of articles, novels, and other diegeses, such as standard summaries, are only derivative diegeses. Regardless, like reconstructions, derivative diegeses are diegetic auxiliary kinds. They supplement diegeses by summarizing, simplifying, and systematizing them. Our response-dependence account of diegeses therefore applies. A derivative diegesis is a discourse so read. Further, like being a reconstruction, being a derivative diegesis is a relational property. Unlike being a reconstruction, however, which relates three diegeses, being a derivative diegesis relates at least two. There is the derivative diegesis, and there is also one or more diegeses from which it derives. “No wonder that textbooks and the historical tradition they imply have to be rewritten after each scientific revolution,” Kuhn explained. Each revolution involves a reboot, which each textbook reconstructs as it puts it in derivative form. “And no wonder,” Kuhn concluded, “that, as they are rewritten, science once again comes to seem largely cumulative.” The reconstruction permits details from the rebooted diegesis to be expanded by the rebooting diegesis in the form of the textbook.

Hence in our terms Kuhn’s view is that textbooks present all diegetic revision as expansions. In normal science such instances of revision are expansions by default. In revolutionary science they are reconstructed as such. And expansions are cumulative developments. Scientists almost never read the original discourses which textbooks reconstruct and from which they derive. This is so even though, as we understand Kuhn, the development from Newton’s *Principia* to Einstein’s articles, and from Ptolemy’s *Almagest* to Copernicus’s *De Revolutionibus*, are on their own terms reboots.

We may diagram the reconstruction and derivation in each of Kuhn’s examples also. Each diagram indicates a textbook as a derivative diegesis containing a reconstruction of details from a discursively earlier diegesis as rebooted by a discursively later diegesis and then expanded by that later diegesis. We do not indicate when a diegesis reports correctly or incorrectly because in the case of reboots each reports only on its own world. Nonetheless, in the case of reconstructions, because an expansion where there otherwise could be none is permitted, we indicate when a diegesis reports completely or incompletely.



and



Because Kuhn models scientific revolutions on reboots, the history of diegetic revision in science overall is non-cumulative. Yet, because textbooks, on which scientists are educated, are reconstructions and

derivative diegeses, after each revolution “science once again comes to seem largely cumulative” (1970/2012, 138).

Referentialist Revision to Kuhn

Kuhn faced many criticisms from many disciplines.¹⁴ Jed Z. Buchwald and George E. Smith summarize one general philosophical criticism when contending that Kuhn’s analysis of the history of scientific development “is based on a philosophically dubious picture of reference” (1997, 371). That picture is descriptivism. Because the criticism concerns a picture of reference, and diegeses refer, this criticism treats Kuhn’s account of the history of scientific development as one of the history of diegetic revision also.

Philosophers have revised Kuhn’s view by rejecting descriptivism in favor of referentialism. Causal referentialism is the variety usually employed,¹⁵ but referentialism simpliciter suffices:

- (a) **Reference:** A proper name refers directly to its referent without the mediation of its associated descriptions.
- (b) **Meaning:** The meaning of a proper name is exhausted by its referent and so independent of its associated descriptions.

As above, we broaden the notion of a proper name to include the names of kinds, such as ‘mass’ and ‘planet’. Assuming referentialism, these revisers of Kuhn claim, Einstein’s articles did not “displace” (or “replace”) any of Newton’s *Principia*. Rather they revealed something about it by reinterpreting its details. Newtonian ‘mass’ and Einsteinian ‘mass’ both refer directly to and mean mass, regardless of the descriptions associated with either. Insofar as current science is right, the Newtonian incorrectly associates ‘mass’ with ‘conserved quantity equal to force divided by acceleration’, while the Einsteinian correctly associates it with ‘an unconserved quantity equal to energy divided by the speed of light squared’. Likewise, Copernicus’s *De Revolutionibus* did not “displace” any of Ptolemy’s *Almagest*. Rather it revealed something about it by reinterpreting its details. Copernican ‘planet’ and Ptolemaic ‘planet’ both refer directly to and mean planet. The Ptolemaic just incorrectly associated ‘planet’ with ‘objects revolving around the earth’, while the Copernican correctly associates it with ‘objects revolving around the sun’. Regardless these associations determine neither the referent nor the meaning of those terms.

This talk of referentialism as involving “reinterpretation” should sound familiar. Kuhn’s referentialist revisers provide all the elements of a retcon. Einstein’s articles and Copernicus’s *De Revolutionibus* are the retconning diegeses, while Newton’s *Principia* and Ptolemy’s *Almagest* are the retconned diegeses, respectively:

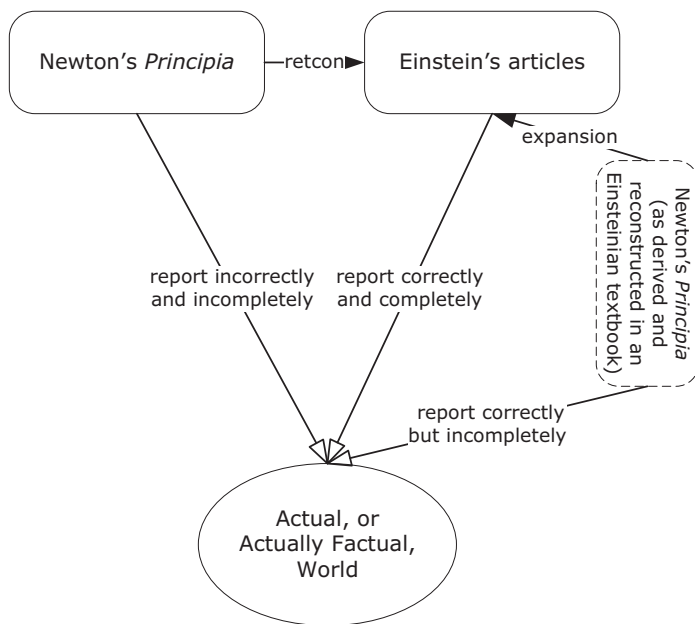
- (1) Newton’s *Principia* and Ptolemy’s *Almagest* are earlier diegeses constituted by earlier discourses when read. Einstein’s articles and

Copernicus's *De Revolutionibus* are later diegeses constituted by later discourses when read.

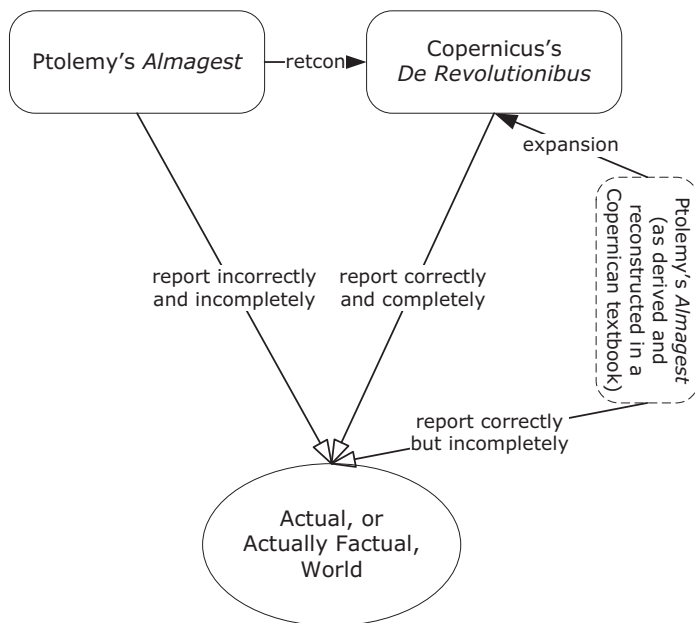
- (2) Einstein's articles and Newton's *Principia* refer to the same world, which remains accepted. Copernicus's *De Revolutionibus* and Ptolemy's *Almagest* refer to the same world, which remains accepted.
- (3) Einstein's articles reinterpret details from Newton's *Principia* in such a way that a reader experiences those details as having been previously incorrect. Rather than being conserved and inconvertible to energy, mass is unconserved but convertible to energy. Copernicus's *De Revolutionibus* reinterprets details from Ptolemy's *Almagest* in such a way that a reader experiences those details as having been previously incorrect. Rather than revolving around the earth, planets revolve not around the earth but around the sun.
- (4) Because Newton's *Principia* and Einstein's articles refer to the same world, Einsteinian mass and Newtonian mass can interact. They are both mass simpliciter. Einstein's $E = mc^2$ accounts for physical relations on which Newton reported as much as it does those on which Einstein reported. Newton just reported incorrectly. Regardless, Newtonians and Einsteinians can themselves (in principle, given overlapping lives and resources) be aware of the reinterpreted details if they communicate because they are communicating about the same world. Likewise, because Ptolemy's *Almagest* and Copernicus's *De Revolutionibus* refer to the same world, Copernican Mars and Ptolemaic Mars can interact. They are both Mars simpliciter. Copernicus's theory of planetary motion accounts for physical relations on which the *Almagest* reported as much as it does those on which Copernicus reported. The *Almagest* just reported incorrectly—so incorrectly, it turns out, that he incorrectly categorized certain objects as planets. Ptolemaics and Copernicans can themselves also be aware of the reinterpreted details if communicated because they are communicating about the same world too.

Because retcons do not involve changing worlds, the world before and after a revolution is the same. There is no community relativity. There is just one actual, or actually factual, world. In the case of retcons we can indicate when a diegesis reports correctly or incorrectly because each reports on the same world. Further, though they do not say so, for Kuhn's referentialist revisers textbooks would be reconstructions also. Rather than being reconstructions of reboots (as in Kuhn's case), they would be reconstructions of retcons (as in Tolkien's case of the 1951 edition of *The Hobbit*). Textbooks would be derivative diegeses as well. They would summarize, simplify, and systematize details reconstructed from discursively earlier diegeses as retconned by discursively later diegeses, so that the discursively later details expand the reconstruction of the discursively earlier ones. Because this still involves a retcon, we still indicate when a

diegesis reports correctly or incorrectly. Because it also involves a reconstruction, we also indicate when it reports completely or incompletely.



and



Thus a retconned diegesis reports incorrectly (which is why it is retconned) and incompletely (which is why it is reconstructed). A retconning diegesis reports correctly (which is why it is retconning) and completely (which is why it differs from a reconstruction). And a reconstruction resulting from a recon reports correctly (because it results from a retconned diegesis) but incompletely (because it results from a retconned diegesis revised by a retconning diegesis).

For Kuhn, just as for his referentialist revisers, “science once again comes to seem largely cumulative” (1970/2012, 138). For Kuhn, it is not cumulative because rebooted and rebooting diegeses report on different actual, or actually factual, worlds—each relative to a community. For his revisers, it is not cumulative because, though retconned and retconning diegeses report on the same actual, or actually factual, world—the one and only—they involve the reinterpretation of details. Regardless in each case the history of diegetic revision comes to seem cumulative because textbooks are reconstructions and derivative diegeses.

Revolutionary Science: Reboots, Retcons, or Expansions?

How should we understand where Kuhn, his referentialist revisers, and his other critics disagree? And how should we understand who is right?

For simplicity assume that both instances of diegetic revision in the history of dynamics and astronomy are the same kind. Our analysis from previous chapters offers three exemplars:

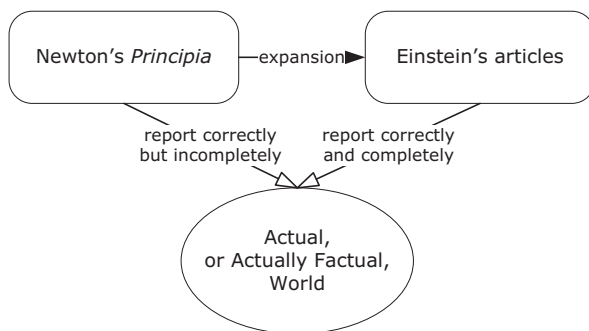
- (a) **Reboots:** Like the diegetic revision from the 1937 edition of *The Hobbit* to the 1951 edition, the diegetic revision from Newton’s *Principia* to Einstein’s articles, and from Ptolemy’s *Almagest* to Copernicus’s *De Revolutionibus*, were reboots.
- (b) **Retcons:** Like the diegetic revision from the 1937 edition to *The Lord of the Rings*, the diegetic revision from Newton’s *Principia* to Einstein’s articles, and from Ptolemy’s *Almagest* to Copernicus’s *De Revolutionibus*, were retcons.
- (c) **Expansions:** Like the diegetic revision from the 1951 edition to *The Lord of the Rings*, the diegetic revision from Newton’s *Principia* to Einstein’s articles, and from Ptolemy’s *Almagest* to Copernicus’s *De Revolutionibus*, were expansions.

The decisive transformation that Kuhn hoped to produce by studying the history of science amounts to (a). His referentialist revisers’ view amounts to (b). And Kuhn’s idea of the image of science by which we are now possessed, and many of his critics may still be possessed, amounts to (c). They read Newton’s and Ptolemy’s discourses as expanded diegeses, and Einstein’s and Copernicus’s as expanding diegeses, respectively:

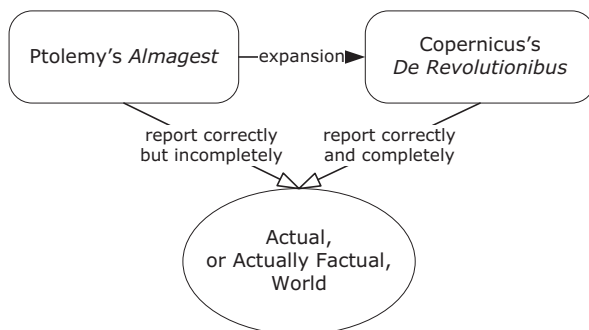
- (1) Newton’s *Principia* and Ptolemy’s *Almagest* are discursively earlier diegeses constituted by earlier discourses when read. Einstein’s

- articles and Copernicus's *De Revolutionibus* are discursively later diegeses constituted by later discourses when read.
- (2) Einstein's articles and Newton's *Principia* refer to the same world, which remains accepted. Copernicus's *De Revolutionibus* and Ptolemy's *Almagest* refer to the same world, which remains accepted.
 - (3) Einstein's articles contain details continuing those from Newton's *Principia* in such a way that a reader experiences those details as having been previously incomplete. Copernicus's *De Revolutionibus* contains details continuing those from Ptolemy's *Almagest* in such a way that a reader experiences those details as having been previously incomplete.
 - (4) Because Newton's *Principia* and Einstein's articles refer to the same world, Einsteinian mass and Newtonian mass can interact. They are both mass simpliciter. Likewise, because Ptolemy's *Almagest* and Copernicus's *De Revolutionibus* refer to the same world, Copernican Mars and Ptolemaic Mars can interact. They are both Mars simpliciter. Newtonians and Einsteinians can themselves (in principle) communicate, as can Ptolemaics and Copernicans.

Like retcons and unlike reboots, expansions do not involve changing worlds. There is just one actual, or actually factual, world.



and



Unlike either reboots or retcons, expansions cannot be involved in reconstructions. Expansions permit themselves. Regardless, like both reboots and retcons, expansions can have derivative diegeses. On this view, textbooks summarize, simplify, and systematize details from the history of diegetic revision of science as cumulative because they are. Because expansions do not involve reconstructions, we do not diagram a textbook resulting from the reconstruction of Newton's *Principia* or Ptolemy's *Almagest* as revised (rebooted in Kuhn's case, retconned in his referentialist revisers') by Einstein's articles and Copernicus's *De Revolutionibus*, respectively. Instead the history of the diegetic revision detailed in each textbook as a derivative diegesis reports directly on the actual, or actually factual, world.

The diegetic revision between Einstein's articles and Newton's *Principia*, and Copernicus's *De Revolutionibus* and Ptolemy's *Almagest*, can each be understood as (a), (b), or (c). Are there reasons to accept one over the other two?

Though we accept diegetic pluripotency and maintain that any discourse can be read as rebooted, retconned, or expanded, and anyone can hold out against each, there are reasons to reject (c). Though we disagree on the specifics, we agree with Kuhn that the history of scientific development, while sometimes cumulative as in normal science, is other times non-cumulative as in revolutionary science. Modeling revolutionary science on expansions, as per (c), fails to distinguish it from normal science. It entails that there was no Einsteinian or Copernican revolution. Relatedly we take issue with expansion's third characteristic that Einstein's articles and Copernicus's *De Revolutionibus* contain details continuing those from Newton's *Principia* and Ptolemy's *Almagest* in such a way that a reader experiences those details as having been previously incomplete. We read Newton's *Principia* as contradicting Einstein's articles insofar as the former treats mass as conserved and inconvertible to energy, while the latter treats mass not as conserved but as convertible to energy. Likewise, we read Ptolemy's *Almagest* as contradicting Copernicus's *De Revolutionibus* insofar as the former treats planets as revolving around the earth, while the latter treats planets as not revolving around the earth. Such contradictions require either (a), which regards each diegesis as reporting on a different world, or (b), which reinterprets the diegeses to avoid the contradictions and instead report on the same world. As we argue next, there is reason to reject (a) because it entails incommensurability and to accept (b) because it does not.

Incommensurability

Like 'paradigm', 'incommensurability' owes like common usage to Kuhn. In *Structure* Kuhn presented his incommensurability "thesis" as a series of theses denying any common measure (perspective, method, language)

against which members of different communities can fully and impartially compare their observations, values, and terms (1970/2012, chapters 9–11). In its Postscript (1970/2012, postscript) and after (1979; 2002) Kuhn distinguished incommensurability concerning observations, values, and meaning.¹⁶ He then ceased talking about the observational variety, and, though writing occasionally about value incommensurability (1979, essay 13), focused on semantic incommensurability, identified with intranslatability:

The phrase ‘no common measure’ becomes ‘no common language’. The claim that two theories are incommensurable is then the claim that there is no language, neutral or otherwise, into which both theories, conceived as sets of sentences, can be translated without residue or loss.

(2002, 36)

Kuhn later refined semantic incommensurability into a lexical-taxonomic form (especially 2002, essays 5, 11). Because the Ptolemaic and Copernican lexica taxonomize objects non-isomorphically, ‘planet’ in the Ptolemaic and Copernican lexica cannot be systematically correlated while respecting the taxonomic structures in which these terms are embedded. Since Kuhn regarded the possibility of such correlation as a necessary condition of translatability, he maintained that the Ptolemaic’s and Copernican’s ‘planet’ are untranslatable and therefore incommensurable. “In the Ptolemaic system planets revolve around the earth; in the Copernican they revolve around the sun” is incoherent because the Ptolemaic ‘planet’ and the Copernican ‘planet’ do not taxonomically align.

Kuhn was motivated to construe incommensurability semantically and ultimately taxonomically because he wanted to minimize talk of “different worlds.” Nonetheless commitment to them still follows. For starters, it is unclear how useful the specifically lexical-taxonomic form of intranslatability is. As one of us argued elsewhere (Goldberg 2015, 76–77), no intranslatability between Newtonian ‘mass’ and Einsteinian ‘mass’ would be due to non-isomorphic lexical-taxonomic structures. Each takes ‘mass’ to refer to a physical quantity. The difference is the properties of that quantity. Even limiting ourselves to cases such as the Ptolemaic and Copernican ‘planet’, such structures are non-isomorphic because they refer to different objects as belonging to different categories and therefore being different kinds. For the Copernican, ‘planet’ refers to the earth, while, for the Ptolemaic, it does not. But then, for the Copernican, there is a possible world in which ‘planet’ does not refer to the earth, the world on which Ptolemy’s *Almagest* reports correctly. Likewise, for the Ptolemaic, there is a possible world in which ‘planet’ does refer to the earth, the world on which Copernicus’s *De Revolutionibus* reports correctly. So semantic and taxonomic construals of incommensurability are implicated in different worlds too.

Descriptivism, which explains the diegetic logic of (a), is behind this. Descriptivism entails that the Bilbo detailed in the 1937 edition of *The Hobbit* exists in a different world from the Bilbo detailed in the 1951 edition. Likewise, the mass detailed in Newton's *Principia* exists in a different world from the mass detailed in Einstein's articles, and the planets detailed in Ptolemy's *Almagest* exist in a different world from the planets detailed in Copernicus's *De Revolutionibus*. In each case there is no common measure against which objects in different worlds could be evaluated neutrally. Thus, for Kuhn and we agree, incommensurability indicates non-cumulative development. Descriptivism's being "a philosophically dubious picture of reference" (Buchwald and Smith 1997, 371) is a general criticism of Kuhn because descriptivism makes incommensurability unavoidable.¹⁷

Nor does Kuhn's claim that history is rewritten, or reconstructed, obviate the incommensurability. Kuhn's reconstructions are of reboots. On Kuhn's view, the *Principia* as a reconstruction is not incommensurable with Einstein's articles, and the *Almagest* as a reconstruction is not incommensurable with *De Revolutionibus*. Yet each original earlier discourse would be read as incommensurable with each original later discourse. This incommensurability is invisible to scientists because they are educated on textbooks rather than their originals. It would not be invisible to those resisting the revolution—nor, we can now appreciate, to historians and philosophers of science explaining how and why the history of science develops as it does.¹⁸

Indeed Kuhn wanted incommensurability to be unavoidable. For him, it marks scientific revolutions. Yet incommensurability does injustice to the linear role played by evidence in the form of worldly details in the history of diegetic revision in science. It therefore highlights problems with (a) as modeling revolutions. Because of incommensurability, worldly details before revolutions cannot be evidence for diegetic details after revolutions. Reconsidering (a)'s fictional case helps. That the 1937 edition of *The Hobbit* reports on the worldly detail that Gollum wants Bilbo to leave his lair is not evidence to believe the diegetic detail of the 1951 edition that Gollum leads Bilbo out of the tunnel unintentionally. The Gollums and Bilbos exist in different worlds. Likewise, in (a)'s factual case, that Newton's *Principia* reports on the worldly detail that an object's force equals its mass times acceleration is not evidence to believe the diegetic detail of Einstein's articles that an object's mass is convertible to energy, and that Ptolemy's *Almagest* reports on the worldly detail that the sun circles the earth is not evidence to believe the diegetic detail of Copernicus's *De Revolutionibus* that the earth circles the sun. Tolkien restarted *The Hobbit* just as Einstein restarted dynamics and Copernicus restarted astronomy. Scientists working under Einsteinian dynamics and Copernican astronomy therefore started a new line of evidence distinct from the one started under Newtonian dynamics and Ptolemaic astronomy,

respectively. Yet, because later scientists routinely rely on evidence gathered by earlier scientists, (a) cannot be right. So why did Kuhn use incommensurability to mark revolutions?

Kuhn did so, we maintain, because he failed to distinguish non-cumulative from non-linear development. Modeling revolutions on reboots, as per (a), entails that revolutions are non-cumulative and non-linear, and therefore that pre- and post-revolutionary diegeses and their details are incommensurable. Modeling revolutions on retcons, however, as per (b), entails that they are only non-linear, and therefore that pre- and post-revolutionary diegeses and their details are reinterpreted to be commensurable. We have reason to prefer (b) because scientific disciplines do not restart after revolutions. Earlier discourses are instead read as reinterpreted by later ones. That respects the role of evidence in the history of scientific development.

Evidence and the History of Scientific Development

Though Ptolemy in the *Almagest* described planets as orbiting the earth, Copernicus used evidence detailed in the *Almagest* and other evidence gathered by a millennium of Ptolemaic astronomers when in *De Revolutionibus* he revealed that planets orbit not the earth but the sun. Copernicus's diegesis (with intermediaries that for simplicity's sake we leave implicit) reconned Ptolemy's diegesis.

As explained in the previous chapter, Le Verrier relied on both Copernican astronomy and Newtonian dynamics when in his letter to Galle he proposed the existence of Neptune. Le Verrier used as evidence for his proposal discrepancies in Uranus's orbit. Because that orbit was recognized as heliocentric, these details were observed by those accepting Copernican astronomy. Le Verrier then calculated based on such evidence to conclude that Neptune exists. The calculations themselves presupposed Newtonian dynamics. Though their subject matter only somewhat overlapped, Le Verrier's letter about Neptune expanded both Copernicus's *De Revolutionibus* and Newton's *Principia*, since those who read it did not reinterpret the discursively earlier diegeses:

- (1) Copernicus's *De Revolutionibus* and Newton's *Principia* are discursively earlier diegeses constituted by earlier discourses when read. Le Verrier's letter about Neptune is a discursively later diegesis constituted by later discourse when read.
- (2) Copernicus's *De Revolutionibus*, Newton's *Principia*, and Le Verrier's letters about Neptune refer to the same world, which remains accepted.
- (3) Le Verrier's letter contains details continuing those from Copernicus's *De Revolutionibus* in such a way that a reader experiences those details as having been previously incomplete by having left out

a planet, and continuing those from Newton's *Principia* in such a way that a reader experiences those details as having been previously incomplete by having not predicted the orbit of that planet.

- (4) Because Copernicus's *De Revolutionibus*, Newton's *Principia*, and Le Verrier's letter about Neptune refer to the same world, Copernican planets, Newtonian mass, and Neptune can all interact, and Copernicus, Newton, and Le Verrier can themselves (in principle) communicate.

Next Le Verrier's letter about Vulcan expanded his letter about Neptune. His letter about Vulcan was a discursively later diegesis while his letter about Neptune was a discursively earlier one. Both referred to the same world, which existed previously. By proposing a new planet, the letter about Vulcan took the letter about Neptune to be incomplete. And Neptune and Vulcan could interact, as their gravitational forces would affect one another as each orbited the sun, as per Copernican astronomy, by obeying laws of motion, as per Newtonian dynamics—about which the respective scientists could communicate. Le Verrier used as evidence for Vulcan's existence discrepancies observed in 21 records from 1697 to 1848 of Mercury's orbit. That orbit was heliocentric, as per Copernican astronomy. Le Verrier then calculated, as per Newtonian dynamics, based on those discrepancies to conclude that Vulcan exists.

The scientific development from Copernicus's *De Revolutionibus* and Newton's *Principia* to Le Verrier's letter about Neptune, and from Le Verrier's letter about Neptune to his letter about Vulcan, may therefore be modeled in the same way in which we modeled Kuhn's idea of the image of science by which we are now possessed. That is to model it on (c). To distinguish modeling both normal and revolutionary science on (c), distinguish (c_{ns}) from (c_{rs}), respectively:

- (c_{ns}) Like the diegetic revision from the 1951 edition of *The Hobbit* to *The Lord of the Rings*, the diegetic revision from Copernicus's *De Revolutionibus* to Le Verrier's letter about Neptune, from Newton's *Principia* to Le Verrier's letter about Neptune, and from Le Verrier's letter about Neptune to his letter about Vulcan, were expansions.
- (c_{rs}) Like the diegetic revision from the 1951 edition of *The Hobbit* to *The Lord of the Rings*, the diegetic revision from Newton's *Principia* to Einstein's articles, and from Ptolemy's *Almagest* to Copernicus's *De Revolutionibus*, were expansions.

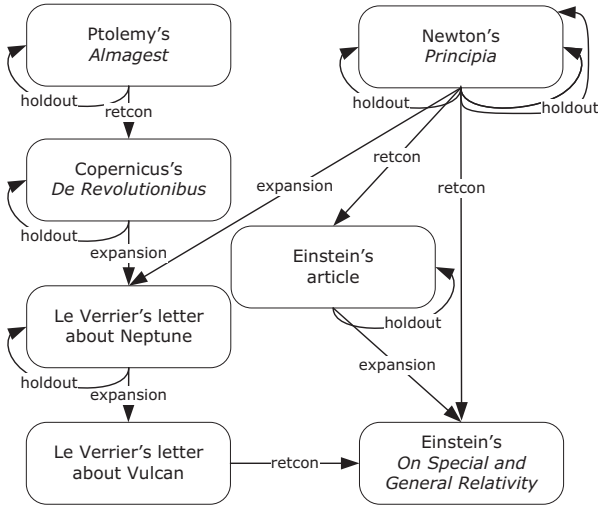
(c_{rs}) is a restatement of (c), an expansion used to model revolutionary science. (c_{ns}) is the same reasoning applied to normal science. We reject (c) and with it (c_{rs}) because it fails to distinguish normal from revolutionary science. We accept (c_{ns}) because it concerns only normal science.

Nonetheless, though, as per (c_{ns}), Le Verrier's letter about Vulcan is an expansion of his letter about Neptune, Vulcan was never found. Le Verrier's conclusion that Mercury's orbit was due to Vulcan was ultimately rejected. Even so the same evidence based on which Le Verrier believed that Vulcan existed became the first proof of Einstein's theory of general relativity. Einstein's articles retconned Newton's *Principia* by revealing something new about mass, that it is an unconserved quantity equal to energy divided by the speed of light squared. Einstein's 1916 *Über die spezielle und die allgemeine Relativitätstheorie (On Special and General Relativity)*¹⁹ in turn expanded his articles by generalizing special relativity and incorporating gravity into the result.²⁰ *On Special and General Relativity* then reinterpreted those observed "discrepancies" in Mercury's orbit by revealing that they were due not to a new planet but to the geometry of space-time near the sun. To do so *On Special and General Relativity* also retconned Newton's *Principia*, reinterpreting gravity not as a force but as space-time curvature caused by the presence of mass-energy. Mercury's observed "discrepancies" were observationally expected. That is the sense in which, as explained in the previous chapter, Le Verrier's "agency still unknown" was explained when Einstein wrote a friend: "The explanation of the shift in Mercury's perihelion, which is empirically confirmed beyond a doubt, causes me great joy" (qtd. in Fernie 1994, 415). It caused Einstein great joy because it served as evidence that general relativity was correct. *On Special and General Relativity* reported correctly on the actual, or actually factual, world.

Hence there is a line of evidence from Ptolemy's *Almagest* to Einstein's *On Special and General Relativity*. That suggests that the history of diegetic revision is itself linear. Sometimes that evidence is reinterpreted (as part of a retcon), as from Ptolemy's *Almagest* to Copernicus's *De Revolutionibus*, from Newton's *Principia* to Einstein's articles, and from Newton's *Principia* to Einstein's *On Special and General Relativity*, separately. Other times it is continued (as part of an expansion), as from Copernicus's *De Revolutionibus* to Newton's *Principia* to Le Verrier's letter about Neptune and then to his letter about Vulcan, and from Einstein's articles to *On Special and General Relativity*. At no time is it restarted (as part of a reboot). That would make earlier and later evidence incommensurable, and so the gathering of evidence—along with its requisite discipline—restart. Though we still maintain that anyone can read any discourse as any diegetic-revisionary kind, only reading those discourses in the history of scientific development mentioned as such recognizes the role played by evidence in the history of scientific development. We therefore model normal science on expansions, as per (c_{ns}), and revolutionary science on retcons, as per (b).

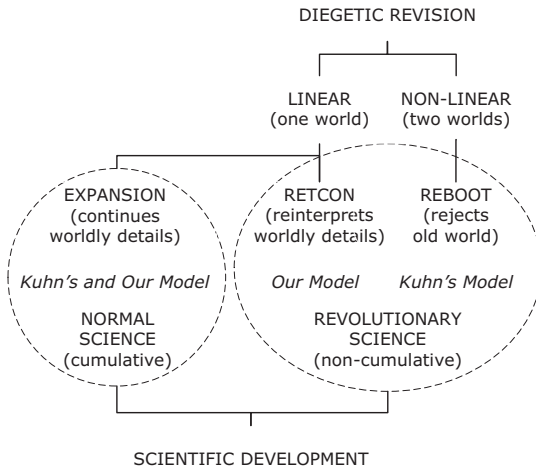
In Chapter 1 we diagrammed the history of the diegetic revision of Tolkien's diegeses. Here we may diagram the history of the diegetic revision of Ptolemy's, Copernicus', Newton's, Le Verrier's, and Einstein's diegeses.

Because retcons and expansions do not change worlds, we do not indicate worlds. Anticipating our analysis, we do however indicate holdouts.



The periods of normal and revolutionary science in astronomy were informed by those in dynamics until they ultimately converged—as the evidence for their diegeses did too—on Einstein’s *On Special and General Relativity*.

A more general diagram illustrates where Kuhn’s and our analyses differ. Recall the diagram from Chapter 1 indicating multiple kinds of diegetic revision and rejection as well as their relation to worlds and worldly details. Combining our analysis and Kuhn’s and focusing only on revision and development (rather than, as we do momentarily, also on rejection and Kuhn’s “victims”), this illustrates both analyses together.



Our terminology appears above our identifying whose model we are illustrating. Kuhn's terminology appears below. As diagramed, we agree with Kuhn that normal science is cumulative and therefore linear. We agree also that revolutionary science is non-cumulative but disagree that it is therefore non-linear.

Holdouts

We agree with Kuhn as well that scientific revolutions have victors and victims. After revolutions, the reading of the discourse associated with the victims is revised. Victims (for Kuhn, they would be of reboots; for us, retcons) reject the revision as well as any reconstruction of the revised diegeses by the revising one. Victims on Kuhn's view are holdouts on ours.

Our diagram of the history of diegetic revision indicates four retcons: from Ptolemy's *Almagest* to Copernicus's *De Revolutionibus*, from Newton's *Principia* to Einstein's articles, from Newton's *Principia* to Einstein's *On Special and General Relativity*, and then from Le Verrier's letter about Vulcan to Einstein's *On Special and General Relativity*. Kuhn considers only Newtonian and Ptolemaic holdouts, who reject the Einsteinian and Copernican revolutions, respectively. We begin there.

For historical, aesthetic, or other reasons, these holdouts reject the discursively later diegesis and read the discursively earlier diegesis as complete, isolated, and definitive. For centuries Newtonian dynamics had predicted to astonishing precision everything from projectile motion to energy required to engage a lever. Newtonian dynamics was also roughly intuitive and uncomplicated. Though careful calculations required using the calculus, basic calculations could be done with simple algebra and geometry in a way not radically inconsistent with common sense. In Wilfrid Sellars's (1962/1991) terms the "scientific image" of Newtonian dynamics was relatively similar to the "manifest image" of everyday experience. That helps explain Newtonian holdouts against Einstein's articles and against *On Special and General Relativity*.²¹ Similarly, for a millennium Ptolemaic astronomy had served as the basis for calendar construction, and so civic and religious observances, as well as navigation, and so travel and trade. It also easily accorded with observation. We still speak of sun "rises" and "sets," as Ptolemaic holdouts would, though according to Copernicans the sun is stationary relative to the earth. The scientific image of Ptolemaic astronomy was relatively similar to the manifest image of reality too. Further, like flat earthers, there might even be Newtonian and Ptolemaic holdouts today.

Hence, for Newtonian holdouts, Newton's *Principia* is a holdout diegesis while Einstein's articles are a larger rejected diegesis. His *On Special and General Relativity* is automatically a rejected diegesis too.

For Ptolemaic holdouts, Ptolemy's *Almagest* is a holdout diegesis while Copernicus's *De Revolutionibus* is a rejected diegesis:

- (1) Newton's *Principia* is a discursively earlier diegesis constituted when an earlier discourse is read, while Einstein's articles are elements of a discursively later diegesis constituted by later discourses when read. Likewise, Ptolemy's *Almagest* is a discursively earlier diegesis constituted when an earlier discourse is read, while Copernicus's *De Revolutionibus* is a discursively later diegesis constituted when a later discourse is read.
- (2) Newton's *Principia* and Einstein's letters refer to different worlds, the latter of which is rejected. Ptolemy's *Almagest* and Copernicus's *De Revolutionibus* refer to different worlds, the latter of which is rejected.
- (3) Einstein's articles allude to details from Newton's *Principia* in such a way that a reader experiences those details as repetitions. Copernicus's *De Revolutionibus* alludes to details from Ptolemy's *Almagest* in such a way that a reader experiences those details as repetitions.
- (4) Despite Einstein's articles' being allusive, because Newton's *Principia* and Einstein's articles refer to different worlds, individuals, objects, and events in the worlds to which Einstein's articles and Newton's *Principia* refer cannot interact. Newtonian mass cannot be converted into Einsteinian energy. Likewise, despite Copernicus's *De Revolutionibus* being allusive, because Ptolemy's *Almagest* and Copernicus's *De Revolutionibus* refer to different worlds, individuals, objects, and events in the worlds to which Ptolemy's *Almagest* and Copernicus's *De Revolutionibus* refer cannot interact. Ptolemaic planets cannot revolve around the Copernican sun.

There may be two related reasons that Kuhn did not consider "victims" or holdouts against developments in normal science. First, when Kuhn wanted to "produce a decisive transformation in the image of science by which we are now possessed" (1970/2012, 1), that transformation focused on revolutionary science. He would presumably accept (c_{ns}) as modeling normal science. Second, holdouts against expansions are less "victimized" than holdouts against retcons. While for neither victor would the world change, for the victor of an expansion it does not even get reinterpreted. Regardless our diagram of the history of diegetic revision illustrates the possibility of holdouts against expansions too. These include Copernicans who hold out against Le Verrier's letter about Neptune as expanding *De Revolutionibus*, Newtonians who hold out against Le Verrier's letter about Neptune as expanding the

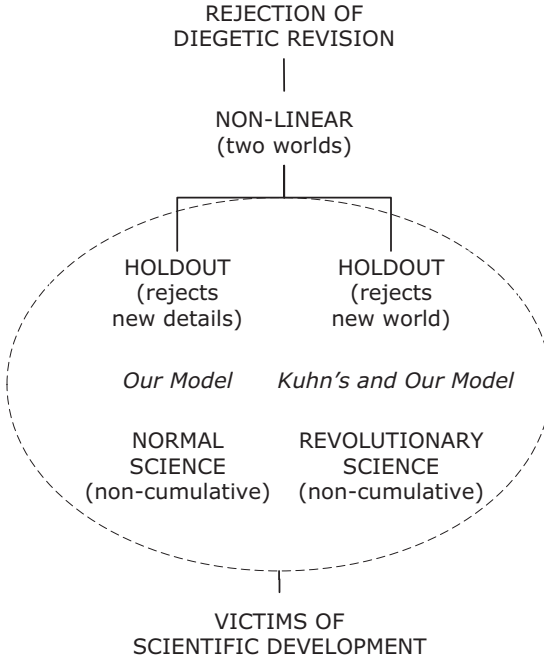
Principia, Copernicans and Newtonians who accepts Le Verrier's letter about Neptune but hold out against Le Verrier's letter about Vulcan as expanding the letter about Neptune, and special-relativity Einsteinians who hold out against Einstein's *On Special and General Relativity* as expanding his articles.

We offer another advance over Kuhn's understanding of the history of scientific development. While (b) and (c_{ns}) model the perspective of those accepting, (d) models the perspective of those rejecting, each revision:

- (d) Like the diegetic revision from the 1937 edition of *The Hobbit* or the 1951 edition to any subsequent discourse as read by Hobbit holdouts, the diegetic revision from any of the earlier discourses to the later discourse read as revising it was rejected, and the discursively earlier diegesis was read as complete, isolated, and definitive.

Because holdouts have much in common with reboots, (d) has much in common with (a). While in the case of (a) revolutionaries accept the change and reject the old world, however, in the case of (d) holdouts reject the change and reject the new. Regardless in each case accepting the diegesis as reporting correctly on one world involves rejecting the other as reporting incorrectly on that world but correctly on a world once modally removed. In each case incommensurability also follows. In the revolutionary cases, for the Newtonian holdout, there is no line of evidence from Newton's *Principia* to Einstein's articles or *On Special and General Relativity*, just as, for the Ptolemaic holdout, there is no line of evidence from Ptolemy's *Almagest* to Copernicus's *De Revolutionibus*. In the normal science cases, for the Newtonian or Copernican holdout, there is no line of evidence from Newton's *Principia* or Copernicus's *De Revolutionibus* to Le Verrier's letter about Neptune, just as, for the Neptune holdout, there is no line of evidence from Le Verrier's letter about Neptune to his letter about Vulcan, and, just as, for the early Einsteinian holdout, there is no line of evidence from Einstein's articles to *On Special and General Relativity*. Nor should there be, lest each holdout be forced to reject her own view. In all these cases evidence restarts as the world changes.

Thus, given the role of evidence in the history of scientific development, we reject (a) as modeling revolutionary science, accept (b) as modeling revolutionary science from the retconning perspective, (c_{ns}) as modeling normal science from the expanding perspective, and (d) as modeling the holdout perspective of each. We may again modify our diagram from Chapter 1, focusing now not on revision (Kuhn's "development") but on rejection (his "victims").



We agree with Kuhn that there are victims of revolutionary science, who regard it as non-cumulative and therefore non-linear. We go beyond him by highlighting that there are victims of normal science, who regard it as non-cumulative and therefore non-linear too.

This also may explain why Kuhn modeled revolutionary science on (a). Kuhn was right that revolutionary science involves different worlds but wrong not to realize that this is so only from the holdout perspective. If he realized the latter, then he might have happened on (d) as a model of revolutionary science from the holdout perspective. Kuhn was right to distinguish non-cumulative from cumulative development but wrong not to realize that development can be cumulative and yet still be non-linear. If he realized the latter, then he might have happened on (b) as a model of revolutionary science. And, though Kuhn did realize that normal science is modeled on something like (c_{ns}), he was wrong not to realize that its holdout perspective is modeled on (d) too.

Kuhnian Conclusions

Recall our models, with (c) bifurcated into normal- and revolutionary-science forms:

- (a) Like the diegetic revision from the 1937 edition of *The Hobbit* to the 1951 edition, the diegetic revision from Newton's *Principia* to

- Einstein's articles, and from Ptolemy's *Almagest* to Copernicus's *De Revolutionibus*, were reboots.
- (b) Like the diegetic revision from the 1937 edition to *The Lord of the Rings*, the diegetic revision from Newton's *Principia* to Einstein's articles, and from Ptolemy's *Almagest* to Copernicus's *De Revolutionibus*, were retcons.
 - (c_{ns}) Like the diegetic revision from the 1951 edition to *The Lord of the Rings*, the diegetic revision from Copernicus's *De Revolutionibus* to Le Verrier's letter about Neptune, from Newton's *Principia* to Le Verrier's letter about Neptune, and from Le Verrier's letter about Neptune to his letter about Vulcan, were expansions.
 - (c_{rs}) Like the diegetic revision from the 1951 edition to *The Lord of the Rings*, the diegetic revision from Newton's *Principia* to Einstein's articles and *On Special and General Relativity*, and from Ptolemy's *Almagest* to Copernicus's *De Revolutionibus*, were expansions.
 - (d) Like the diegetic revision from the 1937 or 1951 edition to any subsequent discourse as read by Hobbit holdouts, the diegetic revision from any of the earlier discourses to the later discourse read as revising it was rejected, and the discursively earlier diegesis was read as complete, isolated, and definitive.

While (b), (c_{ns}), and (d) have a place in modeling the history of scientific development, and of its diegetic revision, (a) has none because it entails that evidence and entire scientific disciplines restart at each revolution, which does not match the historical record. (c_{rs}) has none because it denies the distinction between normal and revolutionary science itself. Though any discourse in the history of science can be read as any diegetic-revisionary kind, for these reasons we read them generally along these lines—modeling normal and revolutionary science as such.

Notes

1. See K. Brad Wray (2012) for elaboration. See Robert J. Richards and Lorraine Datson (2016a, 2) for sales, and Andrew Abbott (2016) for citation, data.
2. See also Kuhn (1979; 1999; 2002).
3. See Goldberg (2015, chapter 3) and Richards and Datson (2016b) as recent examples. See Goldberg (2011, 1) for citations to less recent ones.
4. See Baltas, Gavroglu, and Kindi (1997/2002).
5. See Goldberg (2009b; 2011; 2015, chapter 3) and Goldberg and Matthew Rellihan (2008) for general discussion of Kuhn's view.
6. Margaret Masterman (1970) identified 21 different uses, and Kuhn (1970/2012, 4; 2002, 127) generally concurred.
7. Einstein published five articles in *Annalen der Physik* in 1905. The first, for which he won the 1921 Nobel Prize in Physics, concerned the photoelectric effect. The second and fourth concerned Brownian motion. "Zur Elektrodynamik bewegter Körper" (1905a) was his third and "Ist die Trägheit eines Körpers von seinem Energieinhalt abhängig?" (1905b) his fifth.

8. Kant's empirically real world is phenomenal rather than noumenal. See note 10.
9. See also Kuhn (2002, 104, 207, 245).
10. Though Kuhn rejected the notion of a thing in itself, or noumenon (Goldberg 2015, 74, n. 18), an actual, or actually factual, world not relative to a community would approximate a Kantian transcendently real, or noumenal, world. Kuhn explained that such a world would be "[l]ocated outside of space and time" (2002, 104), and therefore could not be a world for any community.
11. Because they were ultimately published together, we might think of Einstein's articles, like the three volumes of *The Lord of the Rings*, as comprising a single discourse.
12. See Kuhn (1970/2012, 6, 8, 26, 67–69, 71, 74–76, 82, 83, 115–16, 128, 149, 150, 15–53, 154–55, 157–58).
13. Such changes are instances of what Claude Shannon (1948) called 'information entropy'. Derivative diegeses may be instances of the legal category of derivative works.
14. See Goldberg (2011, 279) for recent defenders.
15. Putnam (1975, chapter 6, 11, 15; 1978, 2) first offers this revision. Others include W.H. Newton-Smith (1981, chapter 7), Hacking (1983, chapter 6), Hilary Kornblith (1993, 6), and Igor Douven (2000, 136). Stephen Neale writes that Kripke's (1970/2005) and Putnam's (1973/2008) shared referentialism has had a "profound impact" (2001, 13) on discussions of incommensurability. David Papineau (1996) claims that their shared view settled the debate that Kuhn started, though see Goldberg and Rellihan (2008, §3).
16. Howard Sankey and Hoyningen-Huene call these "perceptual," "methodological," and "semantic . . . components" (2001, ix), respectively, of Kuhn's account of incommensurability.
17. See Goldberg (2015, 74–78), Hoyningen-Huene (1993, chapter 6), and Sankey (1993, 1994) for more on Kuhn on incommensurability.
18. Kuhn wrote that Einsteinians can "interpret" Newton's claims and that Copernicans can do the same for Ptolemy's (Kuhn 1999, 34–35; 2002, 52–53), though his 'interpretation' means what our 'reconstruction of a reboot' means.
19. Robert W. Lawson titles his translation (Einstein 1916/2017) '*Relativity: The Special and General Theory*'.
20. That 1916 discourse itself expanded "Erklärung der Perihelbewegung des Merkur aus der allgemeinen Relativitätstheorie" ("Explanation of the Perihelion Motion of Mercury from General Relativity Theory") (Einstein 1997), a published version of the talk that Einstein read on 18 November 1915 to the Prussian Academy of Science in Berlin, where he demonstrated that what had since Le Verrier been considered evidence for Vulcan was instead evidence for general relativity.
21. Thomas Levenson observes: "Ideas . . . are hard to relinquish, and none more so than those of Isaac Newton. For decades, the old understanding of gravity was so powerful that observers on multiple continents risked their retinas to gaze at the sun in search of Vulcan" (2015, xiii).

6 Being Brontosaurus

Kuhn's approach to the history of scientific development can be analyzed in terms of the history of diegetic revision. It also provided tools to engage in the philosophy of that history by understanding it in terms of expansions, retcons, and holdouts. Most of Kuhn's examples draw from the physical sciences, and the ones that we added to our discussion of them so far do the same. Ptolemy's c. 150 *Almagest* and Copernicus's 1543 *De Revolutionibus*—and Le Verrier's 1846 letter about Vulcan, his 1859 letter about Neptune, and the IAU's 2006 "Resolution B5"—concern astronomy. Newton's 1687 *Principia* and Einstein's 1905 articles concern dynamics. And Einstein's 1916 *On Special and General Relativity* concerns dynamics but was confirmed by astronomy. Yet our analysis is meant to apply to other sciences too. Here we apply ours to episodes from the history of the development of the biological sciences, particularly paleontology. We are concerned with dinosaurs, particularly Brontosaurus. We analyze the history of our understanding of Brontosaurus in terms of the history of diegetic revision of discourses read as factual diegeses concerning Brontosaurus, thereby engaging the philosophy of the history of Brontosaurus's diegetic revision.

Doing so advances our philosophical account of revision in three ways. First, it shows a further application of our account. Second, it brings into that account considerations of both scientific and popular diegeses and demonstrates how such diegeses can diverge. And third, it permits introducing and explicating our notion of diegetic illustrations—or "illustrations."

History of Brontosaurus's Diegetic Revision

Le Verrier died in September 1877, and in July 1878 James Watson from his position in the Wyoming Territory observed what he believed to be Vulcan. During the same period and also in the Wyoming Territory, Othniel Charles Marsh, a paleontologist at Yale University, was leading summer archeological digs for fossilized specimens, or fossils.

Paleontologists regard fossils as tokens of types. Kripke's (1970/2005) example of a type is gold, which, as a chemical element, is a natural kind. Paleontologists' types are genera and species, which are natural kinds too. Like any type, genera and species are abstract objects. In identifying them paleontologists abstract differences across different tokens. Paleontologists agree with Kripke that naming an exemplary token of a type names all its tokens as well as its type. There is even a special term in paleontology for such a token. Because it stands in for the type, it is called a 'type specimen', and two that Marsh claimed to find, about which he subsequently published, are relevant here.

Marsh's multi-part "Principal Characters of American Jurassic Dinosaurs" appeared in the *American Journal of Science* beginning in 1879. The second installment included a two-page description of a type of dinosaur abstracted from a specimen discovered in 1877. Marsh gave the type the genus-species name 'Apatosaurus ajax'.¹ 'Apatosaurus' means deceptive lizard, and Marsh so named it because the specimen had tail bones some of which more closely resembled those of mosasaurs, or marine reptiles, than dinosaurs. Marsh chose 'ajax' after the Greek warrior from the *Iliad* described as gigantic and mighty.

In the same year in which Marsh announced the discovery of *Apatosaurus ajax*, he discovered a different specimen of a type that he named 'Brontosaurus excelsus', or high thunder lizard. His announcement came in "Notice of New Jurassic Reptiles," appearing in the *American Journal of Science* that year. "Numerous remains of Reptiles from the Jurassic deposits of the Rocky Mountains," Marsh reported,

have recently been received at the Yale Museum, and some of the more interesting Dinosaurs are here briefly described. . . . One of the largest reptiles yet discovered has been recently brought to light, and a portion of the remains are now in the Yale collection. This monster apparently belongs in the Sauropoda, but differs from any of the known genera in the sacrum.

(Marsh 1879, 501–03)

The notice ends: "A detailed description of these remains will be given in a subsequent communication. They are from the *Atlantosaurus* beds of Wyoming. The animal was probably seventy or eighty feet in length" (504). Marsh expanded the description of *Brontosaurus excelsus* in 1883 in part six of "Principal Characters of American Jurassic Dinosaurs," under the subsection "Restoration of *Brontosaurus*":

Nearly all the bones here represented belonged to a single individual, which when alive was nearly or quite fifty feet in length. The position here given was mainly determined by a careful adjustment of these remains. That the animal at times assumed a more erect position than

here represented is probable, but locomotion on the posterior limbs alone was hardly possible.

The head was remarkably small. The neck was long, and, considering its proportions, flexible, and was the lightest portion of the vertebral column. The body was quite short, and the abdominal cavity of moderate size. The legs and feet were massive, and the bones all solid. The feet were plantigrade, and each foot-print must have been about a square yard in extent. The tail was large, and nearly all the bones solid.

The diminutive head will first attract attention, as it is smaller in proportion to the body than in any vertebrate hitherto known. The entire skull is less in diameter or actual weight than the fourth or fifth cervical vertebra.

A careful estimate of the size of *Brontosaurus*, as here restored, shows that when living the animal must have weighed more than twenty tons. The very small head and brain, and slender neural cord, indicate a stupid, slow moving reptile. The beast was wholly without offensive or defensive weapons, or dermal armature.

In habits, *Brontosaurus* was more or less amphibious, and its food was probably aquatic plants or other succulent vegetation. The remains are usually found in localities where the animals had evidently become mired.

(Part VI, 81–82)

Though Marsh's discoveries continued,² his *Brontosaurus* specimen received the most attention, as he observed in his 1896 *The Dinosaurs of North America*: "The best-known genus of the Atlantosauridae is *Brontosaurus*, described by the writer in 1879, the type specimen being a nearly entire skeleton, by far the most complete of any of the Sauropoda yet discovered" (qtd. Gould 1991, 88). By identifying its type specimen, Marsh identified what became for the public the best-known type, or genus, of the Atlantosauridae—if not of nearly any other dinosaur genus too.

Brontosaurus did more than merely pique the public's imagination however, as its relation to *Apatosaurus* soon became controversial among paleontologists and eventually the general public. When Marsh died in 1899, the paleontological community had endorsed his identifying the two fossils as type specimens of different genera and species.³ That soon changed. In 1901 Elmer S. Riggs, a paleontologist at the Field Museum of Natural History in Chicago, unearthed in Colorado what he took as a more complete *Apatosaurus* skeleton. Comparing it with Marsh's findings, Riggs concluded in his 1903 "Structure and Relationships of Opisthocoelian Dinosaurs," published in the museum's geology journal:

After examining the type specimen of these genera, and making a careful study of the unusually well-preserved specimen described in

this paper, the writer is convinced that the Apatosaur specimen is merely a young animal of the form represented in the adult by the Brontosaur specimen. As before pointed out, the imperfectly ossified condition of the scapula, coracoid, and sacrum indicate a young animal. . . . In view of these facts the two genera may be read as synonyms. As the term “Apatosaurus” has priority, “Brontosaurus” will be read as a synonym.

(Riggs 1903, 170)

Examining what Marsh had taken as the type specimens of *Apatosaurus* and *Brontosaurus* and comparing them with those of the specimen that he himself had unearthed, Riggs concluded that *Apatosaurus* and *Brontosaurus* were the same genus. What Marsh took as these two genera could be “read” as synonyms, and ‘*Apatosaurus*’ and ‘*Brontosaurus*’ could too. Riggs however maintained that ‘*Apatosaurus*’ had priority because Marsh had used the name first. Ultimately Riggs took the alleged type specimens as the same species also. ‘*Apatosaurus ajax*’ and ‘*Brontosaurus excelsus*’ were synonymous in toto. Yet, rather than giving ‘*Apatosaurus ajax*’ priority, Riggs compromised. Combining the genus name for Marsh’s *Apatosaurus ajax* with the species name for his *Brontosaurus excelsus*, Riggs called the now-single dinosaur type ‘*Apatosaurus excelsus*’. Marsh’s *Apatosaurus ajax* and his *Brontosaurus excelsus* were both *Apatosaurus excelsus* or highly deceptive lizards.⁴

Almost all of the paleontological community agreed with Riggs’s findings and nomenclature. Nonetheless popular displays of the dinosaur tended to prefer Marsh’s nomenclature. In 1905 the American Museum of Natural History in New York City mounted what was taken as the first complete *Apatosaurus excelsus*, though in constructing it the museum combined four different recently unearthed specimens. Moreover, where actual dinosaur bones were missing, casts were made from Marsh’s original specimen. Though no current specimens included a skull, Marsh had discovered two fragments with spoon-shaped teeth in the upper and lower jaws that he had identified as belonging to what he took be another *Apatosaurus excelsus*. We now know that *Apatosaurus*, a genus of the *Diplodocidae* family, had no such teeth. *Camarasaurus*, a genus of a different family, did. The museum’s curators however sculpted a skull based on *Camarasaurus* rather than on *Apatosaurus*. Regardless of the skull, they labeled the display ‘*Brontosaurus excelsus*’, even though, following professional practices, they should have labeled it ‘*Apatosaurus excelsus*’.

Other popular displays followed. Adopting *Apatosaurus excelsus* as its logo, the Sinclair Oil Company presented the Sinclair Dinosaur Exhibit in the 1933–34 Chicago World’s Fair, featuring a to-scale, green model. Sinclair likewise presented its Dinoland Pavilion at the 1939–40 New

York World's Fair, featuring an improved 70-foot version. Also in 1940 Walt Disney premiered its widely viewed cartoon film *Fantasia*, in which *Apatosaurus excelsus* appeared. The dinosaur's popularization was further propelled by other cultural occurrences including Hanna-Barbera's 1960s cartoon television program *The Flintstones*. In 1989 *Apatosaurus* even was featured on a United States postal stamp. Yet Sinclair, Disney, Hanna-Barbera, and the U.S. Postal Service labeled their illustrations 'Brontosaurus' or 'Brontosaurus excelsus' rather than its scientifically preferred synonymous 'Apatosaurus' or 'Apatosaurus excelsus', respectively. The American Museum of Natural History itself kept 'Brontosaurus excelsus' on its display until 1995, 90 years after it had been mounted, and 93 years after Riggs's "Structure and Relationships of Opisthocoelian Dinosaurs" counseled using 'Apatosaurus excelsus', with which other paleontologists almost all agreed.⁵

There are two reasons that we take seriously the importance of the labeling of these illustrations in popular culture. First, the divide between popular culture and science is permeable. Popular sentiment influences scientific development by influencing scientists with ideas and funding agencies with popular priorities, as Kuhn (1970/2012) himself discussed. Second, the divide between popular culture and science is not sharp. Though the "populace" visits the American Museum of Natural History, the museum is also a preeminent research institution, funding scientific studies in diverse fields around the world, and committed to the advancement—as well as popularization—of science. Though the populace likewise used the *Brontosaurus* stamp to mail everything from holiday cards to bill payments (as well as scientific journals), as an illustration produced by the United States government its official government status blurs its official scientific status.

Regardless of what the dinosaur was called, for most of the time since its discovery the dinosaur's name was associated with Marsh's descriptions of 'a stupid, slow moving reptile' that was 'more or less amphibious'—or, making it a definite description, 'the stupid, slow moving reptile most famously discovered by Marsh that was more or less amphibious'. The 1989 stamp however featured a fully mobile *Brontosaurus*, with skin more colorful than the swamp-blending green of the Sinclair model. Though the change in description was not instantaneous, it began with Robert Bakker's 1968 "The Superiority of Dinosaurs" article in *Discovery* and 1975 "Dinosaur Renaissance" article in *Scientific American*. Richard Owen had coined 'dinosaur' in his 1842 "Report on British Fossil Reptiles," Part II, in the *Report of the British Association for the Advancement of Science*, to mean fearfully great lizard (103, note). By using the suffix 'saurus' to name his new genera, Marsh had assumed that they were related to lizards and so cold-blooded. Riggs agreed. Bakker did not. In his 1986 *The Dinosaur Heresies: New Theories Unlocking*

the Mystery of the Dinosaurs and Their Extinction, Bakker reinterpreted what it was to be a dinosaur, revealing that this had always been true of them:

Dinosaurs are not lizards, and vice versa. . . . Dinosaurs were thrown into Reptilia and so into the “lower vertebrates” by early naturalists, but an equally good case could have been made to classify dinosaurs as primitive birds. No one, either in the nineteenth century or the twentieth, has ever built a persuasive case proving that dinosaurs as a whole were more like reptilian crocodiles than warm-blooded birds. No one has done this because it can’t be done.

(22, 27)⁶

When Bakker continued: “Brontosaurus didn’t require deep swamps to buoy their bulk; they didn’t even like to be near swamps” (124), he revealed that *Brontosaurus excelsus*—and therefore *Apatosaurus excelsus*—had never lived in swamps, as envisioned by both Marsh and Riggs. Studying their teeth and the hard, polished pebbles found in their gizzards, Bakker also maintained:

They didn’t eat soft, mushy vegetation. Birds that subsist entirely on soft fruits don’t possess muscular gizzards and don’t use hard pebbles for their gizzard linings. Soft, watery food requires only a short, simply constructed gut—with just enough contractile force to squeeze out all the juices.

Brontosaur teeth, moreover, confirm the heretical idea that they ate a tough vegetable diet. If the brontosaurus dined only on soft water plants, then very little wear would be found on their teeth. But in fact the teeth of *Camarasaurus*, *Brachiosaurus*, and their kin manifest very severe wear, which could only have been produced by tough or gritty food.

(136)

When the paleontological community objected to the 1989 postal stamp, therefore, it was not for its depiction but for its label. The Smithsonian Institute, alluding to such popular-culture products as *Fantasia* and *The Flintstones*, came to call ‘Brontosaurus’ “cartoon nomenclature” (Healey 1989). The same year the U.S. Postal Service defended itself in Postal Bulletin Number 21744: “Although now recognized by the scientific community as *Apatosaurus*, the name *Brontosaurus* was used for the stamp because it is more familiar to the general population” (qtd. in Gould 1991, 92). As paleontologist Stephen Jay Gould observed: “This growing controversy [over the name] even reached the august editorial pages of the *New York Times* (October 11, 1989), and their description serves as a fine epitome of the supposed mess,” which Gould quoted:

The Postal Service has taken heavy flak for mislabeling its new 25-cent dinosaur stamp, a drawing of a pair of dinosaurs captioned “*Brontosaurus*.” Furious purists point out that the “brontosaurus” is now properly called “*apatosaurus*.” They accuse the stamp’s authors of fostering scientific illiteracy, and want the stamps recalled.

(qtd. in Gould 1991, 86)

Though Riggs had suggested that ‘*Brontosaurus*’ be kept as a synonym for ‘*Apatosaurus*’, ‘*Apatosaurus*’ was preferred. After ‘*Brontosaurus*’ infiltrated popular culture, the paleontological community began wanting nothing of it.⁷ When the American Museum of Natural History reopened the Hall of Prehistoric Life in 1995, its former “*Brontosaurus excelsus*” mount featured a new head, discovered and reclassified after Marsh’s death; a longer tail; and a new label, ‘*Apatosaurus excelsus*’.

Attempts to remove ‘*Brontosaurus*’ from popular culture fully proved more difficult. The experience of Bethany Brookshire, a physiologist, exemplifies the resistance. Brookshire found her way to science via a childhood love of dinosaurs. In her blog on 17 March 2011 she wrote: “I had stuffed dino toys. I had dino books. But my favorite was my brontosaurus toy.” Brookshire grew up in the 1980s, well into Bakker’s dinosaur renaissance in the paleontological community. “So you can imagine my horror,” Brookshire explained,

when I found out that [my favorite toy] was not a brontosaurus. It was an apatosaurus. I think it was some older know-it-all kid who told me. I didn’t believe it. I read they were the same and I STILL didn’t believe it. People were lying to me. Everyone knew brontosaurus and apatosaurus weren’t the same!!! My model of brontosaurus had a smooth chin. Apatosaurus had a floppy chin like a turkey and some sort of fleshy crest. TOTALLY DIFFERENT (my 7 year old mind probably never figured on the improbability of a floppy chin getting fossilized). Besides, brontosaurus was awesome!!! Apatosaurus was for losers. Brontosaurus sounds better, right? Right??!

(Brookshire 2011)⁸

Perhaps it is unsurprising that Brookshire and Gould, both of whom loved dinosaurs, also loved reflecting philosophically on them. As undergraduates, Brookshire double-majored in biology and philosophy (Brookshire n.d.), while Gould double-majored in geology and philosophy (Allmon 2008, 24).

Though we cannot be certain, Brookshire’s *Brontosaurus* and *Apatosaurus* toys (or “models”) were likely manufactured by the German company Schleich, the most prominent dinosaur-themed toy company during the second half of the twentieth century. Regardless of whether popular culture

took *Brontosaurus* never to have existed or never to have existed as distinct from *Apatosaurus*—Brookshire’s blog is ambiguous—popular usage did finally catch up with paleontological usage. ‘*Brontosaurus*’ ceased being used in each, as widely reported by several news outlets in 2012. These include National Public Radio (NPR), whose 9 December 2012 report headlined: “Forget Extinct: The *Brontosaurus* Never Even Existed.”⁹ *Brontosaurus* had never been a dinosaur, since it had never existed. Yet, sharing Brookshire’s ambiguity, NPR went on to maintain “that Marsh, in his rush. . . , carelessly and quickly mistook [*Brontosaurus*] for something new.” *Brontosaurus* was not something new. It was instead *Apatosaurus*.

Ironically, a decade and a half before the popular lexicon gravitated to the scientific, the paleontological community had begun weighing the possibility that *Brontosaurus* and *Apatosaurus* existed as distinct dinosaurs after all. In 1998 Bakker had published “Dinosaur Mid-Life Crisis: the Jurassic-Cretaceous Transition in Wyoming and Colorado,” suggesting that Marsh’s *Apatosaurus ajax* and *Brontosaurus excelsus* were not the same dinosaur. They were not both Riggs’s *Apatosaurus excelsus*. While finding “no shape differences in limbs or vertebrae between *Apatosaurus ajax* and *Brontosaurus excelsus*,” Bakker noted differences between two braincases. “If these assignments are correct—and all evidence indicates that they are”—then, Bakker concluded, they are the skulls of two different dinosaurs (1998, 75). On classification at least Riggs, not Marsh, had been wrong.

While Bakker’s dinosaur renaissance caught on in paleontology and popular culture, his 1998 article did in neither. Riggs’s *Apatosaurus excelsus*, paleontologists and the general public alike agreed, was not a stupid, slow moving reptile. It was however the same genus and species as Marsh’s original *Apatosaurus ajax* and *Brontosaurus excelsus*. Apparently on classification Riggs, not Marsh, had been right. Until 2015 this is what paleontologists and the general public thought.

In their 7 April 2015 article “A Specimen-Level Phylogenetic Analysis and Taxonomic Revision of Diplodocidae (Dinosauria, Sauropoda)” in *PeerJ*, Emanuel Tschopp and Octavio Mateus at the Universidade Nova de Lisboa, and Roger Benson at Oxford University, also argued that on classification Riggs was wrong and Marsh was right, though for different reasons. Measuring and classifying a range of sauropod fossils including 81 skeletons and 477 distinct skeletal features—far more than any previous study—they concluded:

some species previously included in well-known genera like *Apatosaurus* and *Diplodocus* are generically distinct. Of particular note is that the famous genus *Brontosaurus* is considered valid by our quantitative approach.

(Tschopp, Mateus, and Benson 2015)¹⁰

Because *Brontosaurus*’s neck vertebrae were higher and narrower than *Apatosaurus*’s, *Brontosaurus* and *Apatosaurus* were different genera.

Marsh's original *Apatosaurus ajax* and *Brontosaurus excelsus* were different species. Riggs's *Apatosaurus excelsus* was itself Marsh's *Apatosaurus ajax*, leaving Marsh's original dinosaurs—now understood, thanks to Bakker, as warm-blooded with avian features.

Though debate continues, as of this writing the paleontological community apparently has accepted Tschopp, Mateus, and Benson's results. Related species have also been discovered. Two species of *Apatosaurus* and three of *Brontosaurus* are recognized as members of the Diplodocidae family: *Apatosaurus ajax*, *Apatosaurus louisae*, *Brontosaurus excelsus*, *Brontosaurus yahnahpin*, and *Brontosaurus parvus* (Tschopp, Mateus, and Benson 2015). The first and third were Marsh's. Insofar as Riggs privileged Marsh's *Apatosaurus ajax*, the first was also Riggs's.

The popular-cultural community is apparently catching up too. On 15 April 2015 William Herkewitz's "Brontosaurus Is Back: New Study Says the Dino Is Real After All" appeared in *Popular Mechanics*. Like Brookshire's blog and NPR's report, Herkewitz's article suggests that there was something not real about *Brontosaurus*. Yet, like both of them, it also explains: "After 112 years of controversy, some paleontologists say the *Brontosaurus* really is its own dinosaur" rather than really being the *Apatosaurus*. Unlike either Brookshire or NPR, however, Herkewitz ascribes that ambiguity to paleontologists:

Paleontologists have spent the last century insisting that the species and its name (Latin for "thunder lizard") are invalid—that the first fossil was incorrectly or deceptively described, or that what was called *Brontosaurus* is really another similar dinosaur, the *Apatosaurus*.
(Herkewitz 2015)

Herkewitz should have been more careful, but we can recognize his point. Paleontologists have spent more than the last century—Riggs published in 1903—insisting on one of two things. First, the genus—not the species—*Brontosaurus* and its name 'Brontosaurus' are invalid. Or second, what was called *Brontosaurus*—as we should put it, what was called 'Brontosaurus'—referred to *Apatosaurus*, because *Brontosaurus*—the genus, not the name—is really *Apatosaurus*. Further, though Herkewitz does not recognize this, while the first may be true in popular culture, it is not true in paleontology. From Riggs onward, neither *Brontosaurus* nor 'Brontosaurus' was taken as invalid. The latter however was taken as not preferred. Herkewitz however is right that, as things now stand, both paleontologically and popularly, *Brontosaurus* is back (as a distinct dinosaur).

Dinosaur Types

The history of *Brontosaurus*'s diegetic revision involves multiple instances of paleontologists abstracting differences across different specimens to genera and species. Identifying those abstractions merely by genera and

species names however elides details of the history. Some distinct abstractions were given the same paleontological names because they came to be identified as the same type. Others were given the same name but were later re-identified as distinct types. As we begin our philosophical analysis of this historical development, we employ our own names for these various abstractions: ‘Apato’ and ‘Bronto’ followed by a roman numeral representing historical order of naming.

By our count paleontologists abstracted seven types, only some of which are now thought distinct:

- Apato I:** a cold-blooded dinosaur initially paleontologically called ‘Apatosaurus ajax’, later paleontologically called ‘Apatosaurus excelsus’, and popularly called ‘Brontosaurus’ (or ‘Brontosaurus excelsus’)
- Bronto I:** a cold-blooded dinosaur initially paleontologically called ‘Brontosaurus excelsus’, later paleontologically called ‘Apatosaurus excelsus’, and popularly called ‘Brontosaurus’ (or ‘Brontosaurus excelsus’)
- Apato II:** a warm-blooded dinosaur paleontologically called ‘Apatosaurus excelsus’, and popularly called either ‘Brontosaurus’ (or ‘Brontosaurus excelsus’) or ‘Apatosaurus’ (or ‘Apatosaurus excelsus’)
- Apato III:** a warm-blooded dinosaur with a distinct braincase paleontologically called ‘Apatosaurus ajax’
- Bronto II:** a warm-blooded dinosaur with a distinct braincase paleontologically called ‘Brontosaurus excelsus’
- Apato IV:** a warm-blooded dinosaur with distinct neck vertebrae paleontologically called ‘Apatosaurus ajax’
- Bronto III:** a warm-blooded dinosaur with distinct neck vertebrae paleontologically called ‘Brontosaurus excelsus’

We may summarize how these types figured in the diegetic revision of *Brontosaurus* as follows:

- (1) In 1879 Marsh publishes an article abstracting Apato I, which he calls ‘Apatosaurus ajax’, from a partial skeleton that he discovered in 1877.
- (2) In 1879 Marsh publishes an article abstracting Bronto I, which he calls ‘Brontosaurus excelsus’, from a partial skeleton that he discovered in 1879.
- (3) In 1903 Riggs publishes an article claiming that (i) a specimen that he discovered in 1901 is a more complete skeleton of an Apato I; (ii) the specimen that Marsh discovered in 1877 and from which he abstracted Apato I, which Marsh took as mature, is instead part of an immature Apato I; and (iii) the specimen that Marsh discovered

in 1879 and from which he abstracted Bronto I is instead part of a mature Apato I. Riggs then maintains that Bronto I is not distinct from Apato I and calls the now-single species Apato I ‘*Apatosaurus excelsus*’.

- (4) In 1905 the American Museum of Natural History constructs an Apato I display, which it calls ‘*Brontosaurus excelsus*’, from different specimens, casts, and a conjecturally sculpted skull.
- (5) Later popular-culture products, including books, films, toys, and World Fair models represent Apato I, which they call ‘*Brontosaurus*’.
- (6) In 1968 Bakker publishes the first of several articles and books claiming that dinosaurs are not reptiles but are warm-blooded and related to birds, and abstracting Apato II, which he calls ‘*brontosaurus*’.
- (7) In the 1980s popular-cultural products represent dinosaurs as warm-blooded and avian, including a toy manufacturer (likely Schleich) that produces two toys, one called ‘*Brontosaurus*’ and one ‘*Apatosaurus*’, which both represent Apato II contradictorily.
- (8) In 1989 the U.S. postal service releases a stamp that represents Apato II and calls it ‘*Brontosaurus*’.
- (9) In 1995 the American Museum of Natural History revises its 1905 display to represent Apato II with a correct skull and calls it ‘*Apatosaurus excelsus*’.
- (10) In 1998 Bakker publishes an article claiming that Bronto II, called ‘*Brontosaurus excelsus*’, and Apato III, called ‘*Apatosaurus ajax*’, are distinct genera and species.
- (11) In 2011 and 2012 popular-science news sources, including Brookshire’s blog and NPR’s report, claim ambiguously that *Brontosaurus* never existed simpliciter and that *Brontosaurus* never existed as distinct from *Apatosaurus*.
- (12) In 2015 Tschopp, Mateus, and Benson publish an article claiming that Bronto III, called ‘*Brontosaurus excelsus*’, and Apato IV, called ‘*Apatosaurus ajax*’, both exist as distinct genera and species.
- (13) In 2015, and soon after Tschopp, Mateus, and Benson publish their article, popular science news sources, and particularly Herkewitz’s article, claim ambiguously that *Brontosaurus* is again thought to exist simpliciter and again thought to exist as distinct from *Apatosaurus*.

According to current scientific consensus, as per Tschopp, Mateus, and Benson (2015), and as popularly reported by Herkewitz (2015), Apato IV and Bronto III, called ‘*Apatosaurus ajax*’ and ‘*Brontosaurus excelsus*’, respectively, are actual, or actually factual, dinosaurs. How do these types compare to the others? Answering this requires determining how the 13 steps diegetically relate. For simplicity we let the steps stand for the diegeses and illustrations mentioned in them.

Philosophy of Brontosaurus's Diegetic Revision

Steps (1), (2), (3), (6), (10), and (12) involve diegetic revision.

Marsh's (1) detailed a specimen, abstracting from it to Apato I. His (2) detailed another specimen, abstracting from it to Bronto I. By transitioning between (1) and (2), Marsh merely moved his attention from one specimen to another. This is similar to Le Verrier's moving his attention from Neptune to Vulcan considered in the previous two chapters. There we read Le Verrier's letter about Vulcan as taking his letter about Neptune as incomplete regarding planets in the solar system. More details of their shared world needed recording. Here we read Marsh's (1) about *Apatosaurus ajax* as incomplete regarding dinosaurs in earth's history. More details of their shared world, including about *Brontosaurus excelsus*, needed recording. We read Marsh's (2) as expanding his (1).

Riggs's (3) in turn presented new diegetic details reporting on newly unearthed specimens that required reinterpreting Marsh's (1) and (2) as referring to the same dinosaur. Riggs reinterpreted Marsh's 'Apatosaurus ajax' mentioned in (1) and 'Brontosaurus excelsus' mentioned in (2) as in his own words "synonyms." They were synonyms not only with each other but also with his and what became for a time the paleontological community's preferred name, 'Apatosaurus excelsus'. What appeared to be specimens of distinct dinosaurs turned out to be immature and a mature specimens, respectively, of the same dinosaur, *Apatosaurus excelsus*. In (3) *Brontosaurus excelsus* and *Apatosaurus ajax* were both revealed to be *Apatosaurus excelsus* even though in (1) and (2) it had seemed otherwise. We read (3) as retconning both (1) and (2).

Next in (6) Bakker reinterpreted 'dinosaur' and a fortiori 'Apatosaurus excelsus'. They were now associated not with 'cold-blooded lizard relative', as per Riggs's (3), but with 'warm-blooded bird relative'. As definite descriptions they might become 'the cold-blooded lizard relative whose most famous specimen Marsh discovered' and 'the warm-blooded bird relative whose most famous specimen Marsh discovered', the latter of which entails the description 'not the cold-blooded lizard relative whose most famous specimen Marsh discovered'. Bakker thereby revealed a new understanding of dinosaurs, giving a new birth, or renaissance, to their study. As warm-blooded bird-relatives, Apato II was the dinosaur type that Bakker himself had abstracted. Yet Bakker was referring to the same genus and species to which Riggs and Marsh had referred. Bakker's reinterpretation revealed that his Apato II was Riggs's and Marsh's Apato I, which Riggs had previously revealed was Marsh's Bronto I. We read Bakker's (6) as retconning Riggs's (3). 'Brontosaurus' continued to refer to *Apatosaurus*. It remained a synonym before and after Bakker's retcon.

Bakker continued to use 'Brontosaurus excelsus' when he read his (10) as retconning his (6). That is because Bakker concluded that Marsh had been right to categorize *Brontosaurus excelsus* and *Apatosaurus ajax* as

distinct, though for different reasons. Marsh did not have the braincases to study. So Bakker's Apato III and Bronto II, which he abstracted in (10), differed for reasons that themselves differed from why Marsh's Apato I and Bronto I, which Marsh had abstracted in (1) and (2), respectively, differed. Yet the paleontological community held out against Bakker's retcon. According to the community, Bakker's (10) reported incorrectly on the actual, or actually factual, world. Bronto II and Apato III were not actual, or actually factual, dinosaurs. The community instead read Riggs's (3) as retconned by Bakker's own (6) as complete, isolated, and definitive. Because to date no one has diegetically revised (10), Bakker's later diegesis remains a diegetic dead end.

The paleontological and popular-cultural community accepted the view that Brontosaurus was Apatosaurus and that 'Apatosaurus' was preferred—until Tschopp, Mateus, and Benson's (12), which retconned Bakker's (6). After measuring neck vertebrae, Tschopp, Mateus, and Benson revealed that specimens previously abstracted as Apato II—which subsumed those that had even earlier been abstracted as Apato I and Bronto I—differed sufficiently to signify two distinct dinosaur types, abstracted as Apato IV and Bronto III. Recall that Bakker's 1968 diegesis had revealed that Apato I as abstracted by Riggs was warm blooded. And recall that Riggs's 1903 diegesis had revealed that Bronto I as abstracted by Marsh was Apato I, even though Marsh had thought them distinct. Tschopp, Mateus, and Benson, by examining Marsh's original specimens as well as many unearthed since, therefore vindicated Marsh's view that Apatosaurus and Brontosaurus were distinct while also accepting Bakker's retconning that each was warm-blooded and avian. Tschopp, Mateus, and Benson's Apato IV was revealed as Marsh's Apato I, while Tschopp, Mateus, and Benson's Bronto III was revealed as Marsh's Bronto I. Riggs's Apato II therefore was revealed as both Apato I and Apato IV, while Bronto I was revealed as Bronto III. We read (12) as retconning (6) by distinguishing Apatosaurus from Brontosaurus, just as (1) and (2). Yet we read (12) as doing so by accepting that dinosaurs were avian, which had resulted from (6)'s having retconned (3).

As of this writing, there are holdouts against (12), reading Bakker's (6) as complete, isolated, and definitive. They include American paleontologist Michael D'Emic (2015) and geologist Donald Prothero (2015), the latter of whom maintains: "Until someone has convincingly addressed the issue, I'm going to put 'Brontosaurus' in quotes and not follow the latest media fad, nor will I overrule Riggs (1903) and put the name in my books as a valid genus." D'Emic and Prothero accept Bakker's (6), which retcons Riggs's (3), and so understand dinosaurs not as reptilian but as avian. Bakker's (6) referred to the same dinosaur as Riggs's (3) did, even though each associated different descriptions with its name. Nonetheless D'Emic and Prothero also reject (12), which retcons Bakker's (6), and so understand Apatosaurus and Brontosaurus as the same.

Diegetic Illustrations

So far we have analyzed steps (1), (2), (3), (6), (10), and (12). The remaining seven steps involve either derivative diegeses or *diegetic illustrations*. Before considering them, we need to understand what diegetic illustrations are.

While it has multiple meanings, call a representation of a diegesis, fully or partly, usually rendered in a medium different from the medium in which the discourse is rendered a 'diegetic illustration' or simply an 'illustration'. Call the process whose product is an illustration 'to illustrate'. Images that represent individuals, objects, or events of a diegesis, fully or partly, count as illustrations of, and so illustrate, it. This discourse, *Revising Fiction, Fact, and Faith: A Philosophical Account*, contains diagrams that illustrate its diegesis partly in the medium of boxes, words, arrows, and ovals. Illustrations of Tolkien's diegeses include paintings and drawings done by Tolkien as well as his son Christopher and others, which appeared as cover and interior art accompanying the discourses.

Like reconstructions and derivative diegeses, illustrations are diegetic auxiliary kinds. They supplement diegeses. Reconstructions supplement them by being third diegeses resulting from reading any first discourse as revised by any second discourse in a way that permits an expansion where there otherwise could be none. Derivative diegeses supplement them by summarizing, simplifying, and systematically discussing their details by putting them into what for the requisite community becomes canonical form. And illustrations supplement them by representing them, fully or partly, usually in a medium different from the medium in which the correlative discourses are rendered.

Being an illustration, like being either of these other diegetic auxiliary kinds, is therefore a relational property. There is the diegesis, and there is the illustration of it. Unlike reconstructions and derivative diegeses, however, illustrations are not diegeses in our sense because they do not necessarily involve linguistic objects and so are not constituted when discourses are read. We therefore do not apply our response-dependence account of diegeses to them. Not all diegetic auxiliary kinds are diegeses, which is why, unlike 'diegetic-revisionary kind', 'diegetic auxiliary kind' is not hyphenated.

Illustrations often represent either fewer or more details than indicated by their diegesis. The diagrams in *Revising Fiction, Fact, and Faith* represent fewer by rendering the objects of our diegesis merely as boxes, words, arrows, and ovals. Drawings of Bilbo represent more by rendering the hair on his head, folds in his clothing, and angles of light on his body beyond what Tolkien's diegesis indicates. Further, as representations, illustrations are interpretations, interpolations, or estimations of their diegeses, so may contain errors.¹¹ Because illustrations are not constitutive of their diegesis, those errors do not alter the diegesis. While a

diegesis is independent of its illustrations, the converse fails. Thomas E. Wartenberg is right that “[t]he most obvious feature of an illustration is that it is *directed*, that is, stands in necessary relation to some other thing that it is the illustration of” (2012, 89) and so “illustrations are ontologically dependent upon the text,” or diegesis, “that they illustrate” (90). His use of ‘illustration’ roughly matches ours.

Nor need illustrations be physically part of the discourse whose diegesis they represent. A poster reproduction of the watercolor that Tolkien painted for the cover of the 1937 edition of *The Hobbit* illustrates that diegesis, as does the original watercolor itself, regardless of where each is located. Professional artists, including John Howe, Alan Lee, and Ted Nasmith, as well as legions of amateurs, have drawn and painted illustrations of Tolkien’s diegeses, displaying them independently from the correlative discourses. Size is irrelevant too. Planetariums project illustrations of Copernicus’s *De Revolutionibus* across enormous curved ceilings. Biblical illustrations across the domed ceilings of the Sistine Chapel may be even larger. Some illustrations are three-dimensional and even mechanical, such as solar-system models of Copernicus’s diegesis, termed ‘orreries’ after the Earl of Orrery, who commissioned one of the first in 1704. Illustrations may include animated cartoons, dolls, live-action dramatizations or films, maps, and statues, as well.

Brontosaurus’s Diegetic Illustrations and Derivative Diegeses

Steps (4), (5), (7), (8), and (9) involve diegetic illustrations.

Because discourses read as factual diegeses are read as reporting on the actual, or actually factual, world, their illustrations are read as reporting on the same. Though illustrations are usually rendered in a medium different from the medium in which the discourse is rendered, this is only partly so of the first that we are considering. (4), the 1905 museum display, was an illustration of (3), Riggs’s 1903 article, though contra the article was labeled ‘Brontosaurus excelsus’. Besides being comprised of casts and a conjecturally sculptured skull, (4) contained dinosaur bones. It was also an especially prominent illustration of (3) because it was the type specimen for the now-single species, *Apatosaurus*. Nor was (4) *Apatosaurus*’s only illustration. While (5)—popular books, films, and toy models—was itself neither a type specimen nor comprised of dinosaur parts, it too illustrated (3).

(7), (8), and (9) involve illustrations also, this time of Bakker’s (6). Specifically they illustrated Bakker’s *Apatosaurus* II detailed in (6), again labeled ‘Brontosaurus’. The paleontological community eventually accepted (6) and had previously accepted Marsh’s nomenclature of ‘*Apatosaurus excelsus*’, which remained from his (3). The popular-cultural community did the same albeit more slowly. Though we may wonder how well (7),

including Brookshire's Brontosaurus and Apatosaurus toys, illustrated (6), popular illustrations became more stable by (8), the U.S. postage stamp, which illustrated Apato II detailed in (6). Yet popular nomenclature was no more stable, when the stamp labeled the illustration 'Brontosaurus'. Finally, as both a scientific and a popular illustration, (9), the 1995 museum display, stabilized illustration and name. An illustration of Apato II detailed in (6), the display was labeled 'Apatosaurus excelsus'.

We can also ask how these illustrations interrelate. Regardless of labeling, William J.T. Mitchell argues that "scientific dinosaur images" (1998, 104), or illustrations made by the paleontological community, divide into three periods. The "Victorian period" began around 1840, when Owen devised 'dinosaur'. The "modern consensus" began around 1900, when Marsh and Riggs were active. And the "dinosaur renaissance," named after Bakker's article, began around 1960, when Bakker was active. Because the modern consensus illustrated herbivorous dinosaurs as Marsh had described Brontosaurus—as "a stupid, slow moving reptile" (Marsh 1883, Part VI, 81–82)—which neither the Victorian period nor the dinosaur renaissance did—Mitchell maintains that dinosaur illustrations interrelated according to "evolution," first progressively, then regressively, and finally progressively across periods. In our terms, discourses read as diegeses concerning dinosaurs were diegetically revised, and in virtue of that revision their illustrations were revised too.

Accepting Mitchell's categories, (7), (8), and (9) would be "dinosaur renaissance" illustrations. (7) however presents challenges. The Schleich toy company compounded nomenclatural confusion by taking 'Apatosaurus' and 'Brontosaurus' to refer to distinct dinosaurs. While the error reproduces aspects of Marsh's original understanding, both Schleich dinosaurs were post-Bakker and so avian rather than reptilian. While either toy may be understood independently as an illustration of (6)—detailing the post-Riggs, post-Bakker Apatosaurus excelsus, though in one case it is labeled by the popular synonym 'Brontosaurus'—the challenge occurs in the simultaneity of the pair. At the time there was no discourse read as a diegesis in which Apatosaurus and Brontosaurus existed as distinct warm-blooded dinosaurs. What explains (7), which treats them as such?

Two possibilities present themselves. First, Schleich, taken as a reading community, might have tried reading directly or in the form of derivative diegeses Riggs's and Bakker's discourses, (3) and (6), each as a distinct diegesis reporting on the actual, or actually factual, world. Since the diegeses are contradictory, however, they cannot both report correctly. Both toys then cannot illustrate correctly either. One would instead report or represent correctly on a merely possible, or possibly factual, world. Apato II turns out to be actually, or actually factually, either Brontosaurus or Apatosaurus—and merely possible, or possibly factually, the

other. Second, the toys need not illustrate a factual diegesis, since Schleich might have read both Riggs's and Bakker's discourses as bracketed diegeses. The company would be unconcerned with whether either diegesis reports correctly or incorrectly, and with whether either was factual at all. As of this writing, Schleich continues to manufacture dinosaur toys, but both *Apatosaurus* and *Brontosaurus* are missing from its production line (Schleich n.d.). Perhaps because they had been criticized for their previous confusion—or are simply waiting for the paleontological community's ideas to stabilize for a longer period of time—Schleich is avoiding matters altogether.

The remaining two steps, (11) and (13), involve derivative diegeses.

Brookshire's blog and NPR's report in (11) derive from Bakker's (6). They also share a related confusion with (7), Schleich's toys. As explained above, Brookshire's blog and NPR's report apparently claim both that *Brontosaurus* did not exist simpliciter and that *Brontosaurus* did not exist as a distinct dinosaur. The claims are incoherent in a way similar to the example in Chapter 5: "In the Ptolemaic system planets revolve around the earth; in the Copernican they revolve around the sun" because, as Kuhn explained, "[f]or no univocal reading of the term 'planet' is the compound sentence true" (2002, 15). Here there is no univocal reading of 'Brontosaurus'.

There are three explanations for the contradiction. First, like all derivative diegeses, Brookshire's blog and NPR's report derives, or draws, its details from another diegesis, and, like all summaries, simplifications, and systematizations, derivative diegeses may inadvertently introduce changes. The contradiction might have been accidental. Second, bloggers vying for readers often make their blog entries provocative. That is no less so of Brookshire's. Likewise, journalists may tend toward sensationalism. While NPR might do so less than other news sources, its headline, "Forget Extinct: The Brontosaurus Never Even Existed," is more sensationalist than the body of its report, which stated instead that *Brontosaurus* and *Apatosaurus* were not "different." And third, Brookshire and NPR might unknowingly be appealing to both descriptivism and referentialism simultaneously. While semantic dualism entails that neither descriptivism nor referentialism can by itself function as a complete analysis of proper names, those accounts remain inconsistent if applied by the same community at the same time. Brookshire and NPR can be understood as members of the popular-cultural community. In 'Brontosaurus never existed simpliciter', the community might be understanding 'Brontosaurus' descriptively. *Brontosaurus* never existed because—we now know—no dinosaur ever satisfied the descriptions that Marsh had associated with the name. In 'Brontosaurus never existed as a distinct dinosaur', the community might be understanding *Brontosaurus* referentially. *Brontosaurus* never existed as distinct because—we now know—even though no

dinosaur ever satisfied those descriptions, Riggs revealed that *Brontosaurus* had always been *Apatosaurus*.¹²

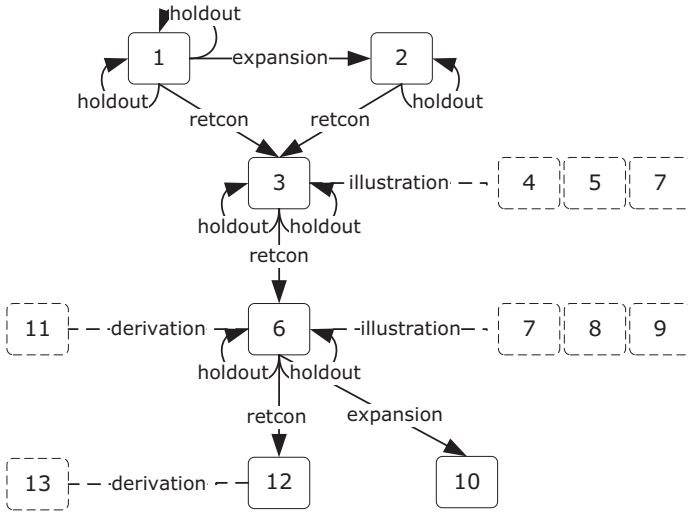
Following Tschopp, Mateus, and Benson's 2015 (12), twenty-first-century popular culture was quicker to catch up. Just as Brookshire's and NPR's (11) is diegetically derivative of Bakker's (6), Herkewitz's (13) is diegetically derivative of (12).

(13) is inversely ambiguous to (11). Instead of 'Brontosaurus did not exist simpliciter' and 'Brontosaurus did not exist as a distinct dinosaur', there is now 'Brontosaurus did exist simpliciter' and 'Brontosaurus did exist as a distinct dinosaur'. Regardless the same three explanations apply. First, as a derivative diegesis, there may have been inadvertent change. We already cataloged Herkewitz's inexactness earlier. Second, there may have been journalistic sensationalism, especially in the headline, "Brontosaurus Is Back: New Study Says the Dino Is Real After All." Brontosaurus had never "left" nor had any study said that it was not "real." And third, 'Brontosaurus did exist simpliciter' and 'Brontosaurus did exist as a distinct dinosaur' may be explained by both descriptivist and referentialist understandings of 'Brontosaurus' simultaneously. Brontosaurus did exist simpliciter because—we now know—there was a dinosaur that satisfied descriptions that Marsh had associated with the name.¹³ Brontosaurus did exist as a distinct dinosaur because—we now know—even though (some other of) the descriptions associated with the name had changed, the name had always referred to Brontosaurus.

Diegetic Diagram

Our philosophical analysis reveals that in the history of *Brontosaurus*'s diegetic revision steps (1), (2), (3), (6), (10), and (12) involve diegetic revision; (4), (5), (7), (8), and (9), diegetic illustrations; and (11) and (13), derivative diegeses. That was one reason that our analysis was so complicated. Other reasons were that diegeses were multiply reconnected, multiply illustrated, illustrated to different degrees of accuracy, inconsistently named, and paleontological and popular-cultural in provenance.¹⁴

The complications become more manageable when diagramed. Numerals correspond to names of non-derivative diegeses, diegetic illustrations, and derivative diegeses mentioned in the 13 steps. Because, like reconstructions, illustrations and derivative diegeses are diegetic auxiliary kinds, their numerals are within boxes with broken borders. Black arrows continue to connect discourses read as diegetically revising, or holding out diegetically revising, the ones at which those arrows end. Though diegeses are never connected with arrows or lines to reconstructions—whether or not those reconstructions are also derivative diegeses, as textbooks would be—they are connected with broken lines to illustrations and non-reconstruction derivative diegeses.



Almost certainly (12) will be expanded as paleontologists learn more about *Apatosaurus ajax* and *Brontosaurus excelsus*. Future retcons are possible too. Other specimens not identified earlier might be discovered and regarded as new type specimens, as detailed in new articles that retcon Tschopp, Mateus, and Benson’s, Riggs’s, or even Marsh’s articles. Holdouts to these possible future steps, as well as to actual past steps, are possible also. Given the needs of paleontological and popular-cultural consumption, we can expect further derivative diegeses and diegetic illustrations as well. (12) and its diegetic successors are likely to be the basis for these, as it is for (13).

Notes

1. While scientific convention is to italicize genera and species names, many of the primary sources that we consider do not do so consistently or at all. Out of discursive consistency, we do not either except when they are italicized in direct quotations.
2. Marsh claimed to discover 80 distinct dinosaurs, the most of any paleontologist, though currently only 23 are accepted as actual, or actually factual. Nor is Marsh’s success rate that atypical. According to Michael Benton, a paleontologist at the University of Bristol, dinosaur-species identification has an overall error rate of 48.2 percent.
3. Marsh’s *Apatosaurus ajax* skeleton became the type specimen of both *Apatosaurus* the genus and *Apatosaurus ajax* the species, while his *Brontosaurus excelsus* became the type specimen of both *Brontosaurus* the genus and *Brontosaurus excelsus* the species. Both the public and the paleontology community often focused on genus type.
4. Joseph LaPorte (2004, 37–45) discusses *Brontosaurus* and *Apatosaurus* in the context of Kripke’s claim that identity statements are necessary.
5. See note 7.

6. Bakker closes: “When the Canada geese honk their way northward, we can say: ‘The dinosaurs are migrating, it must be spring!’” (1986, 462).
7. A notable exception was Gould (1991, 90–91), who argued that based on its greater popularity ‘Brontosaurus’ should have been not only retained but also preferred.
8. Brian Switek (2011) recounts Brookshire’s and other’s similar experiences, including his own.
9. The radio announcer read from a completed text, i.e., a discourse.
10. They also observed: “Two numerical approaches were used to increase reproducibility in our taxonomic delimitation of species and genera.”
11. This is another example of Shannon’s (1948) information entropy.
12. The account is more complicated, since on this descriptivist understanding both Brookshire and NPR would have to incorporate descriptions from Bakker’s (6) that left enough descriptions from Marsh’s (1) and (2) consistent with them.
13. As with Brookshire and NPR (see note 12), Herkewitz would have to incorporate descriptions from Bakker’s (6) that left enough descriptions from Marsh’s (1) and (2) consistent with them.
14. Nor need paleontology and popular culture ever fully coincide. LaPorte observes: “Ordinary speakers are happy, for example, to grant that whales are not fish. . . . Although many lay speakers do call [a koala] a ‘koala bear,’ they seem prepared to concede that it is not *really* a bear . . . when they become informed of the koala’s scientific status” (2004, 31). LaPorte is right about whales but it is less clear that he is right about koalas. We can imagine someone like Brookshire insisting, perhaps even unyieldingly, that everyone knows that koalas are a kind of bear. A better example that LaPorte does not consider is zucchini. According to botany, they are a fruit. According to popular culture, they are a vegetable.

7 Analyzing Abraham

While Bilbo is a fictional hobbit, and Brontosaurus is a factual (and at last check factually correct) dinosaur, historically some of the most influential instances of diegetic revision concern faith. Faith, and more specifically various faiths or religions, are obvious objects of study for a philosophical account of revision. Faiths tend to have discourses read as diegeses around which communities with remarkable historical longevity coalesce, including communities coalescing around diegeses that revise discursively earlier diegeses. So read those discourses are called ‘scriptures’ by those who follow them and ‘religious texts’—our ‘religious diegeses’—generally.

While in previous chapters our concern was the history of scientific development, here we trace the history of religious development in terms of the history of diegetic revision, thereby engaging in its philosophy. As explained below, this involves analyzing the philosophy of the history of the diegetic revision of Abraham—regarded by each of the world’s three main monotheistic faiths, Judaism, Christianity, and Islam, as a patriarch.¹

We begin however by considering how religious diegeses relate to factual and fictional diegeses. Since early-modern Europe (if not before and elsewhere), many have maintained that science, communicated through factual diegeses, and religion, communicated through religious ones, are opposed. Galileo was tried for championing Copernicus’s astronomical views, regarded as denying Church doctrine. John Locke wrote that when faith and reason—manifest as religion and science—are “contrary,” the latter takes precedent (1689/1979, IV.xviii.8). Immanuel Kant felt the need to establish the limits of knowledge, science included, “to make room for faith,” religion in particular (1787/1998, Bxxx, emphasis suppressed). More recently, Richard Dawkins, Daniel Dennett, Sam Harris, and Christopher Hitchens—the so-called “Four Horsemen of the Non-Apocalypse” (Hoffman 2014)—have argued that because science and religion are opposed, and science should be accepted, religion should be rejected. Yet many also have argued that science and religion are unopposed. Having limited knowledge to make room for faith, Kant claimed that there was now room for both. William James thought that one could

go to Church on Sunday and the office or laboratory during the week (Rorty 2000, 78–79). Again more recently, Stephen J. Gould (1997) maintained that science and religion are “nonoverlapping magisteria.” Each operates in its own unopposed domain.

Whether or not science and religion are opposed, this suggests that factual and religious diegeses are nevertheless distinct. As explained below, however, they are not always. Moreover Dawkins and others may be understood as regarding religious diegeses as fictional. While some do read their discourses as such, others do not, nor do different readings necessarily track membership in religious communities. So religious diegeses are not neatly categorized as either factual or fictional. Discourses read as religious diegeses can also be read as bracketed, but that does not distinguish them either, since not everyone reads them as such nor is every bracketed diegeses religious. No one thing fully distinguishes religious diegeses, nor do they constitute a diegetic kind such as fact or fiction. Religious diegeses do however have three distinguishing tendencies.

Religious Diegeses

The first tendency is that discourses read as religious diegeses are also read as factual, fictional, bracketed, or some combination. They may be so read by members and non-members of their communities.

First, discourses read as religious diegeses may also be read as factual by members and non-members.

Orthodox, fundamentalist, or traditional members may read a discourse as a religious diegesis reporting correctly on the actual, or actually factual, world. Reform, mainline, or liberal members may read it as reporting correctly on only some details and incorrectly on other details.

Non-members may also read a community’s discourse as a factual diegesis, though presumably one that reports more incorrectly than correctly on the actual, or actually factual, world. Such non-members may read one such a discourse as incorrectly factual because, as members of a different community, they instead read another discourse as correctly factual. If they believe that all religious diegeses report incorrectly, then they may be atheists.

Second, discourses read as religious diegeses may also be read as fictional by members and non-members.

Though it might seem unintuitive, certain mystics, such as some Kabbalists in the Jewish tradition, Gnostics in the Christian, and Sufis in the Muslim, may read discourses read as religious diegeses also as fiction because they regard them as applying mimetically to the actual, or actually factual, world, by reporting on a merely possible, or actually fictional, one. They may believe that mimesis is the best means by which to reach truths about their own world, which require diegetic detailing through allegory or metaphor. Though mystics may consider themselves

members of their larger religious community, those reading the discourse as factual and especially reporting correctly may not.

Rather than reading a community's discourse as incorrectly factual, non-members may also read it as fictional with more or less mimetic applicability. Such readers may read one community's discourse as fictional because they read another as factual. If they read all religious diegeses as fictional, then they may be atheists—distinct from atheists who read all or some such discourses as incorrectly factual. Like certain mystics, however, non-members may read the diegesis as applying mimetically but to a degree insufficient for belief and community membership.

Third, a discourse read as a religious diegesis may also be read as bracketed by members and non-members alike. Perhaps either or both are agnostic. Community members could be agnostic about whether the diegesis reports correctly or applies mimetically yet still value their membership and their coreligionists' fellowship. Non-members could decide not to be troubled by the status of other communities' diegeses. Likewise, whether or not they are members, anthropologists, historians, literary critics, political scientists, and sociologists may read such discourses as bracketed. They remain agnostic because they are interested in other aspects of the faith such as the resulting diegesis's place in human life, history, literature, politics, and society, bracketing its diegetic kind and focusing instead on its structure, including its style and plot.

And fourth, discourses read as religious diegeses may also be read as some combination of factual, fictional, or bracketed. While doing so may damage the coherence of the resulting diegeses, such discourses sometimes are so read. This may be especially true of those resulting from combinations of previously independent discourses, such as the Bible. Since non-religious diegeses could also be read as factual, fictional, bracketed, or some combination by members and non-members of communities, the previously mentioned tendency is not necessarily unique to religious diegeses. They are however common to them.

Evidence and Holdouts

The second distinguishing tendency of religious diegeses concerns evidence. Those reading discourses as factual and fictional diegeses, whether religious or non-religious, can appeal to evidence in the form of worldly details to decide to what extent a diegesis reports correctly on (if read as factual), or applies mimetically to (if read as fictional), the actual, or actually factual, world. For religious diegeses, worldly details may concern individuals, ancient and modern; objects, sometimes pedestrian and other times privileged; events, mundane and perhaps even miraculous—and others also. Some details may be directly observable and others if distant in space or time not. Just as Copernicus had at his disposal centuries of observations of planetary motion, members of religious communities

have at their centuries-old observations of individuals, objects, and events. Worldly details between religious and scientific communities can even overlap, as members of religious communities sometimes appeal to scientific disciplines to support their view. Other details may not be observable at all if abstract in the sense of not existing in space and time. In those cases members of communities may appeal to other diegeses for “interdiegetic” support.

Readers of discourses read as religious diegeses however can also appeal to worldly details of a specific sort. Though not absent among readers of other discourses, emotion as evidence from the world of the reader’s own experience tends to be more common in religious contexts. Such emotion may manifest as feelings of faith.² Members of religious communities tend to be more likely than those of other communities to regard their diegesis as reporting correctly or applying mimetically because they have some degree of faith that it does so. Though such faith is not unsurmountable lest the history of religious development be brief, it is nevertheless noteworthy.

Emotion and specifically faith as evidence is related to the third distinguishing tendency of religious diegeses. Holdouts tend to persist more regarding religious diegeses than regarding those discourses read only as fictional, factual, or bracketed and so as non-religious diegeses. Indeed religious holdout communities tend to have remarkable historical longevity because they rely on faith as evidence. Most if not all read the 1937 edition of *The Hobbit*, the 1951 edition, and *The Lord of the Rings* as (merely) fictional. After the 1937 edition was retconned, or the 1951 edition expanded, by *The Lord of the Rings*, few read the 1937 or 1951 edition as complete, isolated, and definitive. There were few Hobbit holdouts of either sort. Most if not all read Newton’s *Principia* as well as Einstein’s articles and *On Special and General Relativity* as (merely) factual. After the former was retconned by the latter two, some did read the *Principia* as complete, isolated, and definitive (at least relative to Einstein’s discourses, since most had read the *Principia* as having already been expanded by different diegeses). After the alleged aberration in Mercury’s perihelion was explained away by Einsteinian dynamics, some Newtonian holdouts remained. Yet they did not do so for long, as within a generation most if not all had vanished. Max Planck captures this aspect of the history of scientific development:

a new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it.
(1949/2007, 33–34)

Kuhn (1970/2001, 151) quoted Planck approvingly. Whether or not death is the only or even main reason for the dearth of holdouts, however,

they nevertheless do die. While there were Newtonian holdouts soon after Einstein, they tended not to pass along their views to future generations. Though Planck and Kuhn are concerned only with fact, something similar occurs with fiction. While there may have been Hobbit holdouts soon after Tolkien published the 1951 edition of *The Lord of the Rings*, they tended not to pass along their views to future generations either. Whatever few contemporary holdouts there may be may even originate independently. This is almost certainly the case of Corey Olsen, mentioned in Chapter 1.

Conversely certain members of religious communities tend to have faith that their diegesis is infallible and therefore non-revisable. The religious holdout may therefore have an a priori attitude against revision. As a priori it would be an attitude independent of considerations of any specific revision or even whether an attempt at revision has occurred. Most paleontologists held out against Bakker's 1998 article claiming that *Apatosaurus* and *Brontosaurus* were not the same dinosaur because they found Bakker's claim unconvincing. They did not hold out because of any a priori attitude that Riggs's 1903 was unrevisable. Holdouts of the 1937 edition of *The Hobbit* may hold out specifically because they aesthetically dislike the rebooting of the 1951 edition or retconning of *The Lord of the Rings*. They would be less likely to do so because of any similar such attitude that the 1937 edition was unrevisable. Moreover, insofar as either holdout did for whatever reason assume an a priori attitude, then such a holdout would in effect be reading the holdout diegesis faithfully.

Revision of religious diegeses does occur. Not all members of a religious community assume the same a priori attitude against revision to the same degree. Members of different communities can pressure them to revise their diegesis including perhaps even to reject it. Nonetheless, when immediate holdouts against the revision die, unlike in non-religious communities (and so distinct from Planck's point) they tend to pass along their views. Other holdouts of the same community and especially family members may take their place. That explains the remarkable historical longevity of communities coalescing around religious diegeses. Holdout communities continue as their own religious communities, and those coalescing around what to them is the rejected diegesis may be regarded as members of different faiths. Today most religious communities except for the most recently formed are just holdout communities.³

Next we consider one specific history of revision of religious diegeses. While noteworthy histories occurs elsewhere, we focus only on Abrahamic faiths. We set aside intrareligious distinctions no matter how significant, including differences between Biblical and Rabbinic Judaism, and among Orthodox, Conservative, Reform, and Reconstructionist versions of the latter; Gnosticism, Catholicism, Protestantism, and Orthodox Christianity; and Sunni and Shi'a Islam—and others also. We also consider only the single central diegesis of each faith: the Tanakh for

Judaism, Bible for Christianity, Qur'ān for Islam, and insofar as it is distinct from Christianity Book of Mormon for the Church of Jesus Christ of Latter-day Saints.⁴ Finally, while religious diegeses are flexible enough to be read differently even by those who identify as belonging to the same faith, we restrict ourselves to generalized readings of generally accepted English translations.⁵

Tanakh

Judaism is the oldest Abrahamic faith. Its origin likely traces to the Levant as early as 1500 BCE. Judaism's central discourse is the Tanakh, whose title derives from the first letter of its three parts: the Torah, or Teachings; the Nevi'im, or Prophets; and the Ketuvim, or Writings. Jews read the Tanakh the discourse as the Tanakh the diegesis. The Tanakh starts with Genesis, the first component book of the Torah, with the creation of the world, and closes in Chronicles, the 24th and last book of the Writings, with the Persian king Cyrus's authorizing the restoration of the temple in Jerusalem and the return of exiles from Judah. Genesis, Chronicles, and the intervening books, though they could be read as separate diegeses, are more commonly read as parts of the single diegesis that is the Tanakh. That is how we read them too. When we analyze them, therefore, we do so as parts of a whole.

The Teachings and Prophets were likely canonized into the Tanakh prior to the Common Era and the Writings near the start of the second century CE. Though the Tanakh was set in its complete form centuries later, its oldest books may date as early as 1200 BCE. Among similar such examples, the Tanakh is often read as containing two accounts of creation. The first, Genesis 1:1–2:4, occurs over seven days, with Adam and Eve, the first humans, created after the plants and animals. The second, Genesis 2:4–25, occurs over one day, with Adam created before the plants and animals and Eve created after. Some historians explain such doubling by contending that the Tanakh is a compilation of earlier discourses written by separate authors. One version of this explanation is the documentary hypothesis, according to which those passages in Genesis and Exodus in which God is called 'Yahweh', rendered in English as 'Lord' or 'Jehovah' and sometimes understood as a proper name, derive from a one discourse written by an author known as 'J'. Those passages in which God is called 'Elohim', literally gods and perhaps figuratively the God of gods, derive from another discourse written by an author known as 'E'. Though both J and E apparently existed during the eighth century BCE, they are thought to have lived in separate kingdoms, J in Judah and E in Israel.⁶

Some historians argue further that God of the Tanakh had originally been several gods of different traditions, among whom were Yahweh and El, and that by combining discourses into the Tanakh editors also

combined for readers their gods into a single God, to which ‘Yahweh’ or ‘El’, depending on the passage, refers. Karen Armstrong explains:

The Israelites called Yahweh “the God of our fathers,” yet it seems that he may have been quite a different entity from El, the Canaanite High God worshipped by the patriarchs.

The patriarchs are Abraham, his son Isaac, and his grandson Jacob, who lived in Canaan. Armstrong continues:

He [Yahweh] may have been the god of other people before he became the God of Israel. . . . In pagan antiquity, gods were often merged and amalgamated, or the gods of one locality accepted as identical as the god of another people. All we can be sure of is that, whatever his provenance, the events of Exodus made Yahweh the definitive God of Israel and that Moses was able to convince the Israelites that he really was one and the same as El, the God beloved by Abraham, Isaac and Jacob.

(1994, 20–21)

According to tradition, the Israelites established the kingdoms of Judah and Israel in Canaan after their Exodus from Egypt. In English we name their faith after the former kingdom, calling it ‘Judaism’ and them ‘Jews’. So Jews and indigenous Canaanites would have intermixed. The Canaanites, who counted Abraham, Isaac, and Jacob as patriarchs, had discourses read as religious diegeses too, including ones in which El is head of a pantheon.⁷

Previously called ‘Abram’ in Genesis, this is the first occurrence of ‘Abraham’ in the Tanakh and it appears with both ‘LORD’, translating ‘Yahweh’, and ‘God’, translating ‘El’:

Now when Abram was ninety-nine years old, the LORD appeared to Abram and said to him,

“I am God Almighty;
Walk before Me, and be blameless.
“I will establish My covenant between Me and you,
And I will multiply you exceedingly.”

Abram fell on his face, and God talked with him, saying,

“As for Me, behold, My covenant is with you,
And you will be the father of a multitude of nations.
“No longer shall your name be called Abram,
But your name shall be Abraham;
For I have made you the father of a multitude of nations.

I will make you exceedingly fruitful, and I will make nations of you, and kings will come forth from you. I will establish My covenant

between Me and you and your descendants after you throughout their generations for an everlasting covenant, to be God to you and to your descendants after you. I will give to you and to your descendants after you, the land of your sojournings, all the land of Canaan, for an everlasting possession; and I will be their God.”

(Genesis 17:1–8)

Armstrong’s analysis suggests that the Jews read their discourse the Tanakh as revising how they read an earlier Canaanite discourse. What diegetic revision would that be? Reconsider our four exemplars now generalized:

- (a) **Reboots:** Like from the 1937 edition of *The Hobbit* to the 1951 edition, some instances of diegetic revision are reboots. Descriptivism explains this diegetic logic.
- (b) **Retcons:** Like from the 1937 edition to *The Lord of the Rings*, some instances of diegetic revision are retcons. Referentialism explains this diegetic logic.
- (c) **Expansions:** Like from the 1951 edition to *The Lord of the Rings*, some instances of diegetic revision are expansions.⁸ Both descriptivism and referentialism explain this diegetic logic.
- (d) **Holdouts:** Like from the 1937 or 1951 edition to any subsequent diegesis, rejections of diegetic revision are holdouts. Descriptivism explains this diegetic logic.

If Armstrong is right, then Jews read the Tanakh as retconning the Canaanite diegesis, as per (b). In the Tanakh, El, the god of the Canaanite diegesis, “became” Yahweh, the God of Israel. Further, El had been revealed and reinterpreted as always having been Yahweh, as Moses could “convince the Israelites [and therefore Jews] that he”—Yahweh—“really was one and the same as El.” Before the retconning, Jews might have associated ‘El’ with ‘the god beloved by Abraham, Isaac, and Jacob’ and, because Abraham, Isaac, and Jacob were Canaanites rather than Jews, with ‘not the God of our fathers’. Jews might have associated ‘Yahweh’ with ‘the God of our fathers’, whose fathers were Jews, and so with ‘not the god beloved by Abraham, Isaac, and Jacob’. Regardless Jews read the Tanakh as reinterpreting ‘El’ and ‘Yahweh’ to reveal that they referred to and meant the same God, no matter how described.

Though Armstrong does not say so, some Canaanites might have held out against this retconning by insisting on the importance of the divergent descriptions, as per (d). According to them, ‘the God of our fathers’, who were Jews, and ‘the God beloved by Abraham, Isaac and Jacob’, who were Canaanites, did not refer to and mean the same individual. They might associate ‘El’ with ‘not the God beloved by Abraham, Isaac and Jacob’ because they were Canaanites rather than Jews. For these holdouts,

because the referent and meaning of ‘El’ and ‘Yahweh’ were mediated by these descriptions, they did not refer to or mean the same individual. Canaanite holdouts might therefore have rejected the Tanakh and read their own diegesis as complete, isolated, and definitive—perhaps, as Armstrong suggests, retaining their own polytheistic faith.

Expansions, as per (c), occur in religion too, as explained below. If Armstrong is right, then Jews did not read the Tanakh as expanding the Canaanite diegesis because they did not read the Canaanite diegeses as containing details that were merely incomplete. They needed to reinterpret those details, especially concerning El, to reveal that, contrary to how the Canaanite diegesis described him, El had always been Yahweh—lest they face contradiction.

Finally, we suggest, Jews did not read the Tanakh as rebooting the Canaanite diegesis, as per (a). As in the history of the scientific development so in the history of religious development, rebooting is not the right model generally. Read as fictional, factual, or bracketed, the diegeses would be incommensurable, so there would be no line of evidence from the Canaanite diegesis to the Tanakh. Moses then would be unable to convince the Israelites to identify the Canaanites’ god with theirs.

For present purposes it does not matter whether Armstrong is right about the Tanakh’s provenance nor whether we are right about how Jews read the discursively earlier Canaanite diegesis relative to it (nor that Canaanite holdouts no longer exist—that holdout communities tend to have remarkable historical longevity does not mean that all do nor that such longevity is indefinite). What does matter is that the Tanakh is the first central diegesis in discursive order among all the Abrahamic diegeses. It is the start of the history of the diegetic revision of Abraham.⁹

Bible

Christianity is the second oldest Abrahamic faith. Beginning in the Levant in the first century CE, some of Christianity’s earliest followers identified as Jews, though many Jews may have regarded them as heretics. Combining Jewish and Hellenistic ideas, Christianity’s central discourse is the Bible, read as the Bible the diegesis. The Bible (or “Books”) has two parts, the Old Testament and the New Testament. Each has been published as separate discourses and jointly as a single discourse. Each can therefore be read as a separate diegesis, though neither is diegetically complete without the other. We therefore read them as two significant parts, sometimes diegetically revised separately, of a single larger diegesis.

The Old and New Testaments are themselves composed of multiple books from multiple sources. The Old Testament books draw from the Tanakh often without discursive change except as required by translation, as explained below. The Old Testament includes parts of the Septuagint, the first translation of the Tanakh from Hebrew to Greek, believed

to be completed in 132 BCE. The four Gospels (or “Good News”) are the New Testament’s primary texts, chronicling the life, death, and resurrection of Jesus. Many historians believe that Mark is the oldest, written c. 70 CE, and influencing the writing of Matthew and Luke in the 80s or 90s. John may have emerged from a separate and possibly later tradition. The New Testament also includes Acts of the Apostles, accounts of the ministry of Jesus’s original follows; Epistles, letters from various apostles and other followers to various Christian audiences concerning counsel, doctrine, and instruction; and the Book of Revelation, a collection of prophecy. Melito of Sardis, who died c. 180 CE, may have been the first to divide the Bible into the Old and New Testament and to have devised those names (in Greek translation). If the two Testaments are treated as separate discourses, then it is unclear which is the other’s discursive sequel since the content of both appear to have been in canonical flux from the early second to the late fourth century CE.

From the beginning Christians read the New Testament as fulfilling prophecies in the Tanakh concerning a messiah. Jews also read the Tanakh as containing such prophecies. For them, the messiah was a Jewish savior like Moses, destined to improve the lives and lot of the Jews in their promised land. For Christians, the messiah was the Messiah (or “Christ”), Jesus, the Son of God, meant to provide salvation to Jews, Greeks, and all followers. We consider three instances where Jews and Christians read the same discourse differently.

The first instance is part of the history of Abraham’s diegetic revision. It is the passage from Genesis quoted above. Jews and Christians associate ‘Abraham’ with ‘the man destined by God to be the father of a multitude of nations’ and ‘the man with whom and with whose descendants throughout their generations God will establish God’s covenant’. While Christians associate ‘Abraham’ with the same, they also associate ‘Abraham’ with ‘ancestor of Jesus’ or proverbially ‘the father of Jesus’, as the New Testament reads: “The record of the genealogy of Jesus the Messiah, the son of David, the son of Abraham” (Matthew 1:1). Reading the New Testament as revising the Tanakh, Christians associate descriptions with ‘Abraham’ as applying to the Tanakh itself.

The second instance where Jews and Christians read the same discourse differently is related to the first, ultimately concerning Abraham also. Rather than from Genesis, which starts the Torah, it is from Jeremiah, the penultimate book of the Prophets:

“Behold, the days are coming,” declares the Lord, “when I will make a new covenant with the house of Israel and the house of Judah, not like the covenant which I made with their fathers in the day I took them by the hand to bring them out of the land of Egypt, My covenant which they broke, although I was a husband to them,” declares the Lord. “But this is the covenant which I will make with the house

of Israel after those days,” declares the Lord, “I will put My law within them and on their heart I will write it; and I will be their God, and they shall be My people.”

(Jeremiah 31:31–33)

‘Covenant’ is not a proper name, such as ‘Bilbo’, or a natural-kind term, such as ‘Brontosaurus’. It is instead a social-kind term. It names a kind of agreement, or event that occurred, between individuals of the houses of Israel and Judah—collectively the Jews—and God. Though ‘new covenant’ is descriptive, it can nevertheless be understood as functioning as a proper name insofar as it designates a second agreement exclusively between God and God’s people.¹⁰ Because Jews read ‘covenant’ as recalling the only covenant that God had yet made, mediated by Moses and resulting in the Jews’ exodus from Egypt, they read ‘new covenant’ as referring to and meaning a similar future covenant for the Jews. Christians read ‘new covenant’ as referring to and meaning a different future covenant, the coming of Jesus, for all humanity. While Jews associate ‘new covenant’ with ‘the future agreement exclusively between Jews and God’, Christians associate it with ‘not the future agreement exclusively between Jews and God’. Moreover, because Jews and Christians associate ‘Abraham’ with ‘the man with whom and with whose descendants throughout their generations God will establish God’s covenant’, Jews and Christians associate ‘covenant’ in that description with different events. Jews therefore associate ‘Abraham’ with ‘the man with whom God established one of two exclusive agreements with the Jews’. Christians associate it with ‘not the man with whom God established one of two exclusive agreements with the Jews’ because for them there were not two such agreements, and so there was no such man.

The third instance where Jews and Christians read the same discourse differently is not any specific passage from the Tanakh but instead its order. While Jews read Isaiah, Jeremiah, and other books concerning the Prophets as ordered roughly in the middle and the Writings at the end of the Tanakh, Christians read the Prophets as ordered toward the end with most of what Jews read as the Writings ordered earlier. Christians do so because they read Isaiah, Jeremiah, and similar books as containing prophecies anticipating Jesus, central to the New Testament. Melito and other Christian editors reconstructed the Tanakh as reconnected by the New Testament to reflect this order, naming the reconstruction the ‘Old Testament’. Consider ‘Isaiah’. Like the name of many component books in the Tanakh and the Old Testament, ‘Isaiah’ also names an individual. This ambiguity is manifest in Mark, which mentions what “is written in Isaiah the prophet” (1:1)—perhaps elliptical for what “is written in the book Isaiah, which was written by Isaiah the prophet.” Taking ‘Isaiah’ as a proper name of the book, Jews associate it and the rest of the Prophets with ‘the books of the Prophets, which together are ordered roughly in the

middle'. Christians associate them with 'the books of the Prophets, which together are not ordered roughly in the middle but instead toward its end'.

Thus the history of the diegetic revision of the Bible suggests that the discourse is involved in four steps.

First, as per (b), Christians read the New Testament as retconning the Tanakh by reinterpreting it as prophesizing the coming of Jesus. Though each associates 'Abraham', 'covenant', and 'Isaiah' and the names of the other books of the Prophets with inconsistent descriptions, Christians read those names as referring to and meaning the same individual (person), event, and individual (books), respectively, as used by them or by Jews.

Second, regarding the order of its books, Christians read the Old Testament as a reconstruction of the Tanakh as retconned by New Testament. The Old Testament however is a limited reconstruction. Of the instances where Jews and Christians read the Tanakh differently—we considered 'Abraham', 'covenant', and names of the books of the Prophets—Christian editors reconstructed the retconning only of the third. The Tanakh and New Testament are discursively identical regarding the first and second. Yet the reconstruction of the order is important, since it anticipates Jesus, introduced in the New Testament. The Old Testament's status as a reconstruction also explains its diegetic order relative to the New Testament. Though unclear whether which is the discursive sequel, the New Testament is the Old Testament's diegetic sequel. Generally the individuals, objects, and events on which it reports are regarded as existing after those on which the Old Testament reports.

Third, as per (c), Christians read the New Testament as expanding the Old Testament regarding its order. That is why the Old Testament was created as a reconstruction of the Tanakh as retconned by the New Testament. Reconstructing the books of the Prophets toward the end permits Christians to read the New Testament's Gospels as diegetically adding to those passages in them foretelling the coming of the Messiah. Regarding order, the New Testament revises the Old Testament in such a way that Christians take it to have been previously incomplete. Even 'Old Testament' and 'New Testament' indicate expansion of the former by the latter.¹¹

And fourth, Christians regard the Old and New Testaments each as parts of a single discourse, and read them as part of a single diegesis, the Bible. This complicated diegetic-revisionary reading is made possible by the complicated discursive nature of the Bible and its relation to the Tanakh.

Some however do not read these discourses as involved in diegetic revision at all. A Tanakh holdout holds out against the retcon, the first step, by rejecting the New Testament and reading the Tanakh as complete, isolated, and definitive. Because subsequent steps depend on the first, a Tanakh holdout holds out against them all. While there is no distinct name for Hobbit, Ptolemaic, Newtonian, Vulcan, or Brontosaurus holdouts, Tanakh holdouts are called 'Jews'.¹²

Qur'ān

As Joseph Ernest Renan famously wrote in 1851, unlike the founders of other major world faiths, the Prophet Muhammad “was born in the full light of history.” Islam is the second youngest Abrahamic faith. Insofar as the Church of Jesus Christ of Latter-day Saints is part of Christianity, Islam is the youngest overall. Insofar as Muslims are concerned, however, Islam is the only true faith of Abraham, and so it is the oldest because it is the only.

Islam’s central discourse, the Qur’ān (or “Recitation”), is read as the Qur’ān the diegesis, which consists of 114 chapters believed to have been spoken to Muhammad by the angel Gabriel near Mecca beginning in 609 CE and continuing until Muhammad’s death 23 years later in Medina. Unlike the Tanakh and Bible, the Qur’ān’s passages are arranged not by diegetic order but generally by discursive length, longer to shorter. Mecca in the seventh century was a cosmopolitan trading and polytheistic pilgrimage center. According to Muslim tradition, Muhammad rejected its cultural norms and often meditated and fasted alone in a cave. Here Gabriel first visited him during the last days of Ramadan, the ninth month of what would become the Muslim calendar. Initially Muhammad described these encounters only to his wife and first convert, Khadija. During the subsequent three years, Khadija’s conversion was followed by that of a small number of proselytes, after which Muhammad increased his teachings to create the first Ummah, or Muslim community. Members of the Ummah memorized Muhammad’s teachings. A discourse of those teachings was completed after Muhammad’s death in 632 and standardized in 650 as the Qur’ān.

The Qur’ān does not contain large passages discursively identical to those in the Tanakh or the Bible. It does however contain versions of diegetic details from each, including about Adam as well as Abraham, Isaac, Jacob, and Isaac’s half-brother and Abraham’s other son Ishmael (also mentioned in the Tanakh and Bible). Moses and Jesus particularly are revered as prophetic predecessors to Muhammad, understood as “the seal [i.e., last] of the prophets” (33:40), completing revelations previously made in the Tanakh (and Old Testament) and the Gospels from the New Testament:

He has sent down upon you, [O Muhammad], the Book in truth, confirming what was before it. And He revealed the Torah and the Gospel.

(3:3)

Say, “We have believed in God and in what was revealed to us and what was revealed to Abraham, Ishmael, Isaac, Jacob, and the Descendants [al-Asbāt], and in what was given to Moses and Jesus and to

the prophets from their Lord. We make no distinction between any of them, and we are Muslims [submitting] to Him.”

(3:84)

The Qur’ān makes no distinction between any of them because it regards all of them as Muslims:

And Abraham instructed his sons [to do the same] and [so did] Jacob, [saying], “O my sons, indeed God has chosen for you this religion, so do not die except while you are Muslims.” Or were you witnesses when death approached Jacob, when he said to his sons, “What will you worship after me?” They said, “We will worship your God and the God of your fathers, Abraham and Ishmael and Isaac—one God. And we are Muslims [in submission] to Him.”

(2:132–33)

Already Abraham (along with these others) has been diegetically revised as a Muslim.

The Qur’ān’s version of events also sometimes differs from those in the Tanakh and the Bible. Adam is told the names for the animals rather than naming them as detailed in the Tanakh and the Old Testament. Moreover, though the Qur’ān calls Jesus the ‘Messiah’, the messiah is not divine as in the Christian sense. Christians read the New Testament as detailing that Jesus claimed to be God:

The Jews picked up stones again to stone Him. Jesus answered them, “I showed you many good works from the Father; for which of them are you stoning Me?” The Jews answered Him, “For a good work we do not stone You, but for blasphemy; and because You, being a man, make Yourself out to be God.”

(John 10:31–33)

Muslims read the Qur’ān as correcting that account:

Indeed, the example of Jesus to God is like that of Adam. He created Him from dust; then He said to him, “Be,” and he was.

(3:59)

The Messiah, son of Mary, was not but a messenger; [other] messengers have passed on before him. And his mother was a supporter of truth. They both used to eat food. Look how We make clear to them the signs; then look how they are deluded.

(5:75)

He [i.e., Jesus] was not but a servant upon whom We bestowed favor, and We made him an example for the Children of Israel.

(43:59)

Nor, according to the Qur'ān, was Jesus crucified, resurrected, or revealed to be the Son of God:

And [for] their saying, "Indeed, we have killed the Messiah, Jesus, the son of Mary, the messenger of God." And they did not kill him, nor did they crucify him; but [another] was made to resemble him to them. And indeed, those who differ over it are in doubt about it. They have no knowledge of it except the following of assumption. And they did not kill him, for certain.

(4:157)

And [beware the Day] when God will say, "O Jesus, Son of Mary, did you say to the people, 'Take me and my mother as deities besides God?'" He will say, "Exalted are You! It was not for me to say that to which I have no right."

(5:116)

That is Jesus, the son of Mary—the word of truth about which they are in dispute. It is not [befitting] for God to take a son.

(19:34–35)

When in the New Testament Jesus is described as having been crucified, Muslims read the Qur'ān as reinterpreting those passages not to have been about Jesus but to have been about someone made to resemble him. When Jesus is described as claiming to be the Son of God, Muslims read the Qur'ān as reinterpreting those passages not to be correctly detailing Jesus's own words or nature.

Muslims also reinterpret the New Testament as revealing the coming of Muhammad:

I will ask the Father, and He will give you another Helper, that He may be with you forever; *that is* the Spirit of truth, whom the world cannot receive, because it does not see Him or know Him, *but* you know Him because He abides with you and will be in you.

(John 14:16–17)

But the Helper, the Holy Spirit, whom the Father will send in My name, He will teach you all things, and bring to your remembrance all that I said to you.

(John 14:26)

To Muslims, the Helper is Muhammad, as revealed in the Qur'ān:

And [mention] when Jesus, the son of Mary, said, "O children of Israel, indeed I am the messenger of God to you confirming what came before me of the Torah and bringing good tidings of a messenger to come after me, whose name is Ahmad."

(61:6)

Muslims read the Qur'ān as reinterpreting the events of Jesus's life to reveal that he had provided "clear evidences" (61:6) that Muhammad—meaning the more praiseworthy one, 'Ahmad', is an alternate name—was forthcoming.

Indeed, the history of the diegetic revision of the Qur'ān involves both the Bible, including the Old and New Testaments, and the Tanakh directly. Because the history involving the Bible is clearer regarding the New Testament, we begin there. It suggests that Muslims read the Qur'ān as retconning the New Testament, as per (b). The Qur'ān reinterprets details about the discursively earlier New Testament by revealing that Jesus was not divine. Moreover, because the Old Testament is partly a reconstruction of the Tanakh as retconned by the New Testament, Muslims, like Christians, read it as anticipating the New Testament. So Muslims ultimately read the Qur'ān as retconning the Old and New Testaments and therefore the Bible in toto. Yet, while Christian editors reconstructed the Tanakh as retconned by the New Testament into the Old Testament as a separate discourse, no Muslim editors reconstructed the Bible (partly or fully) as retconned by the Qur'ān into a separate discourse. There is no "Old Qur'ān." Muslims then do not read any discourse as expanded by a different discourse. There is no "New Qur'ān." In the Christian case there is both a retcon and a reconstruction of it that permits an expansion, while in the Muslim case there is only a retcon.

The history of the diegetic revision leading to the Qur'ān involving the Tanakh directly is less clear because of the Tanakh's resemblance to the Old Testament part of the Bible. The Qur'ān calls the Torah the 'Torah', which Jews also call it as they recognize it as the first part of the Tanakh. Christians are less likely to call the first part of the Old Testament by that name. This suggests that Muslims read the Qur'ān as retconning the Tanakh directly. Yet a passage from above suggests that they read it as retconning the Old Testament as part of the Bible instead:

And [mention] when Jesus, the son of Mary, said, "O children of Israel, indeed I am the messenger of God to you confirming what came before me of the Torah and bringing good tidings of a messenger to come after me, whose name is Ahmad."

(61:6)

Though the passage mentions the "Torah" and not the "Old Testament" or "Bible," Jews do not read the Torah as confirmed by Jesus. Christians do.

Muslims might also be thought to read the Qur'ān as retconning the Old Testament as part of the Bible, rather than retconning the Tanakh directly, because the Bible is discursively later than the Tanakh. Historically some Muslims did read the Qur'ān as retconning the Tanakh directly, as evidenced by Muslim tradition and attested history concerning interactions between Muslims and Jews. The Constitution of Medina,

drafted by Muhammad after arriving in the city, identifies eight Jewish tribes and establishes their collective communal distinctness from Muslims. As Islamic historian Jonathan Porter Berkey observes, according to Muslim tradition Jews had a

complicated and ultimately unhappy relationship with the Prophet. . . . [F]ramed by the expulsion of first one, and then a second Jewish tribe from the oasis, and the massacre of the male members of a third (the Banu Qurayza), the Jews usually serve as a sort of foil to Muhammad, and their deteriorating relations as a catalyst for the articulation of a more explicitly Islamic identity.

(2003, 64)

According to tradition, moreover, Muhammad changed his instruction that Muslims pray facing Jerusalem, the Jewish holy city, to his claim in the Qur'ān (2:142–144) that God ordered them to face Mecca. Because the Qur'ān was not completed and standardized until 18 years after Muhammad's death, the Constitution of Medina and tradition indicate that Muhammad distinguished Jews from Christians. He would then have distinguished the Tanakh from the Bible (including the Old Testament).

Muslims may have even read Qur'ān as retconning both the Tanakh directly and the Bible in toto separately. Muslims continued to distinguish Jews from Christians throughout the centuries. As Berkey explains, in the eleventh and twelfth centuries CE,

Muslim, Jewish, and Christian scholars, in a variety of settings, in Baghdad, Cairo, and elsewhere, indulged in a dialogue that was essentially an exercise in comparative religion, meeting sometimes in the presence of caliphs, amirs, and their viziers, and other leading officials, for the exchange of ideas, even (within limits) debates about the relative merits of the different religion traditions.

(160)

Those scholars, by putting all three religions into dialogue, would have read the Tanakh, Bible in toto, and Qur'ān as in dialogue also. Some of them therefore would have read the Tanakh and the Old Testament part of the Bible as distinct, and so Muslim scholars particularly might have read the Qur'ān as retconning both the Tanakh and the Bible (both parts). Muslims today distinguish Christians from Jews also, suggesting that many would still read the Qur'ān as retconning both. Like their reading the Qur'ān as retconning the New Testament, Muslims reading the Qur'ān as retconning the Bible and the Tanakh are both modeled on (b).

Finally, because Muslims read the Qur'ān as retconning the Bible, there are Bible holdouts. They reject the Qur'ān and read the Bible as complete,

isolated, and definitive. These holdouts are called ‘Christians’. ‘Jews’ is the name of Tanakh holdouts, and insofar as Muslims read the Qur’ān as retconning the Tanakh, Jews hold out against that retcon also. Insofar as Muslims read the Qur’ān as retconning the Old Testament part of the Bible, Jews are not holdouts against the Qur’ān but are residual holdouts against the New Testament. They are holding out against a previous diegetic revision, which they read the Qur’ān as itself revising. Since Muslims read the Qur’ān as retconning both the Tanakh and Bible, whose New Testament was previously read as also retconning the Tanakh, Jews hold out against the Qur’ān once directly and once indirectly. Jews and Christians can hold out against retconning by the Qur’ān because they read different descriptions associated with names in these diegeses as determining the individuals to whom the names refer. While Muslims associate ‘Abraham’ with ‘the first Muslim’, Jews and Christians associate it with ‘not the first Muslim’. Here Jews and Christians agree. While Muslim’s associate ‘messiah’ with ‘not the Son of God’, Christians associate it with ‘the Son of God’, Jews would associate it with ‘not the Son of God’. Here Jews and Muslims agree though for different reasons.

Book of Mormon

If Muhammad was born in the full light of history, then Joseph Smith, founder of the Church of Jesus Christ of Latter-day Saints, was born under the glare of the midday sun. The Church of Jesus Christ of Latter-day Saints is either the youngest Abrahamic faith, if taken to be distinct from Christianity (which some Christians take it to be), or the second oldest, if taken to be a branch of it.

The Book of Mormon the discourse is read as the Book of Mormon the diegesis, which is the Church of Jesus Christ of Latter-day Saints’ central diegesis. It is discursively and diegetically preceded by the Bible (Old and New Testaments) and according to many though not all members of the Church succeeded by both the Doctrines and Covenants and the Pearl of Great Price.

According to its title page, the Book of Mormon is “An Account Written by the Hand of Mormon upon Plates Taken from the Plates of Nephi” and “TRANSLATED BY JOSEPH SMITH, Jun.” The Introduction of the Book of Mormons explains:

The book was written by many ancient prophets by the spirit of prophecy and revelation. Their words, written on gold plates, were quoted and abridged by a prophet-historian named Mormon.

After Mormon completed his writings, he delivered the account to his son Moroni, who added a few words of his own and hid up the plates in the Hill Cumorah. On September 21, 1823, the same

Moroni, then a glorified, resurrected being, appeared to the Prophet Joseph Smith and instructed him relative to the ancient record and its destined translation into the English language.

In due course the plates were delivered to Joseph Smith, who translated them by the gift and power of God.

It then gives an account of two civilizations:

One came from Jerusalem in 600 B.C. and afterward separated into two nations, known as the Nephites and the Lamanites. The other came much earlier when the Lord confounded the tongues at the Tower of Babel. This group is known as the Jaredites. After thousands of years, all were destroyed except the Lamanites, and they are among the ancestors of the American Indians.

The Book of Mormon appeals to Genesis: “And from there the LORD scattered them over the face of all the earth” (1:19). The Introduction goes on to explain that the Jaredites are descended from the sons of Noah after the flood, as described in Genesis (10:1–32). The Jaredites next are dispersed by God from the land of Shinar in Mesopotamia where they and others had begun constructing the Tower of Babel, and travel to and settle in America. The Introduction explains as well that the Nephites and Lamanites are descended from Lehi, a prophet living in Judah during the reign of the last king, Zedekiah, himself described in Jeremiah (52:1–12). Nephi and his followers are to have left Jerusalem prior to this second dispersal and to have sailed to America, as explained in the Book of Mormon: “And it came to pass that after we had sailed for the space of many days we did arrive at the promised land; and we went forth upon the land, and did pitch our tents; and we did call it the promised land” (1 Nephi 18:23). Continuing the Abraham’s diegetic revision directly, the Book of Mormon also explains that Abraham is the ancestor of Nephi himself: “And now I, Nephi, do not give the genealogy of my fathers in this part of my record. . . . For it sufficeth me to say that we are descendants of Joseph” (1 Nephi 6:1). Joseph is described in the Bible as Jacob’s son and so Abraham’s great grandson. It continues:

[T]he fulness of mine intent is that I may persuade men to come unto the God of Abraham, and the God of Isaac, and the God of Jacob, and be saved.

(1 Nephi 6:4)

The history of the diegetic revision leading to the Book of Mormon suggests that it is read as expanding both parts of the Bible. As self-identifying Christians, members of the Church of Jesus Christ of Latter-day Saints

read the Old Testament partly as a reconstruction of the Tanakh as reconnected by the New Testament. When the Book of Mormon traces Lehi and the Jaredites, Nephites, and Lamanites back to the Old Testament, they read it as expanding diegetic details of the Old Testament by continuing Noah's lineage. Members of the Church of Jesus Christ of Latter-day Saints read the Book of Mormon as expanding the New Testament by detailing how after Jesus was resurrected he visited ancient America. The New Testament describes Jesus's ascension to heaven:

And after He had said these things, He was lifted up while they were looking on, and a cloud received Him out of their sight. And as they were gazing intently into the sky while He was going, behold, two men in white clothing stood beside them. They also said, "Men of Galilee, why do you stand looking into the sky? This Jesus, who has been taken up from you into heaven, will come in just the same way as you have watched Him go into heaven."

(Acts 1:9–11)

The Book of Mormon then continues Jesus's story, where he is introduced by a voice out of heaven:

And behold, the third time they did understand the voice which they heard; and it said unto them: Behold my Beloved Son, in whom I am well pleased, in whom I have glorified my name—hear ye him. And it came to pass, as they understood they cast their eyes up again towards heaven; and behold, they saw a Man descending out of heaven; and he was clothed in a white robe; and he came down and stood in the midst of them; and the eyes of the whole multitude were turned upon him, and they durst not open their mouths, even one to another, and wist not what it meant, for they thought it was an angel that had appeared unto them. And it came to pass that he stretched forth his hand and spake unto the people, saying: Behold, I am Jesus Christ, whom the prophets testified shall come into the world. And behold, I am the light and the life of the world; and I have drunk out of that bitter cup which the Father hath given me, and have glorified the Father in taking upon me the sins of the world, in which I have suffered the will of the Father in all things from the beginning. And it came to pass that when Jesus had spoken these words the whole multitude fell to the earth; for they remembered that it had been prophesied among them that Christ should show himself unto them after his ascension into heaven.

(3 Nephi 11:6–12)

Moreover a reader of the Book of Mormon would experience details from both parts of the Bible as having been previously incomplete. The

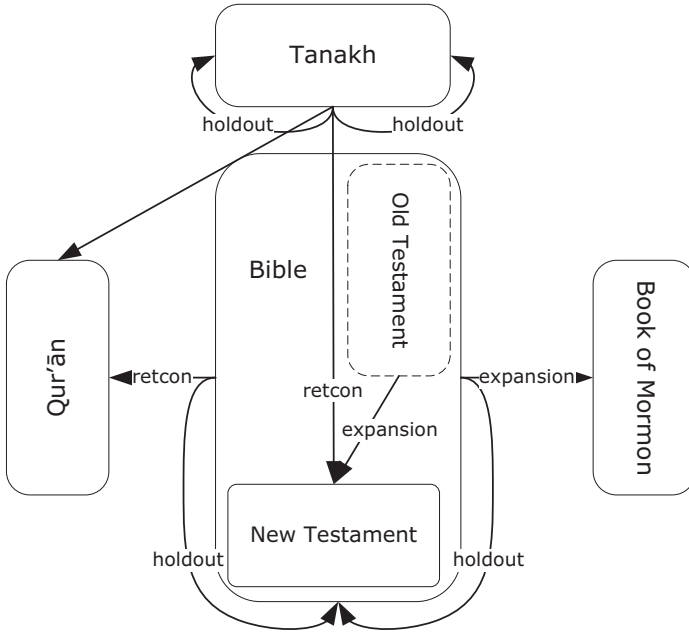
Old Testament left Noah's lineage incomplete, and the New Testament left an accounting of Jesus's actions on earth the same. In each case details from the Book of Mormon are revelatory insofar as they continue details from the discursively earlier diegeses, but in neither case do they reinterpret earlier ones that would otherwise seem contradictory until the revelation.¹³

Though there is no "New Book of Mormon" or "Old Book of Mormon," there is the Church of Latter-day Saints, or latter-day followers of Jesus. This contrasts with former-day saints, or Jesus's former-day followers, Christians who hold out against the Book of Mormon. 'Latter-day' and 'Former-day', like 'New' and 'Old', indicate expansions. Contemporary former-day followers are Bible holdouts. They reject the Book of Mormon and read the Bible as complete, isolated, and definitive. For them, there were no Nephites, Jaredites, or Lamanites; there was no Lehi; and the resurrected Jesus did not visit nor have religious followers in "ancient America"—as expanded from the New Testament. Bible holdouts are called 'Christians'. While members of the Church of Jesus Christ of Latter-day Saints call themselves that as well, other Christians do not always reciprocate. They reject the Book of Mormon because they think that the descriptions associated with 'Noah', 'Jesus', and other names matter. Because Jews read the Tanakh as complete, isolated, and definitive, for them, it does not matter whether the Book of Mormon expands the Bible. Jews reject the Bible's New Testament and with it the Old Testament. The situation regarding Qur'an holdouts, or Muslims, differs more. Muslims read the Qur'an as retconning the Bible and the Tanakh. Members of the Church of Jesus Christ of Latter-day Saints, already reading the Old Testament partly as a reconstruction of the Tanakh as retconned by the New Testament and partly as retconned by the New Testament directly, ignore Muslims' reading the Qur'an as retconning anything—instead reading the Book of Mormon as expanding the Bible in toto.¹⁴ From the perspective of the Book of Mormon, the Qur'an was a diegetic dead end.

Diegetic Diagram

These religious diegeses are connected in many ways, including—as we have emphasized—in Abraham's diegetic revision. This is so regardless of whether the diegesis details Abraham as the father of Isaac and Ishmael, as the Tanakh, Bible, Qur'an, and Book of Mormon do; as an ancestor of Jesus, as only the Bible, Qur'an, and Book of Mormon do; as the first Muslim, as only the Qur'an does; or as an ancestor of Nephi, as only the Book of Mormon does.

This suggests that we may diagram the history of the diegetic revision of the Abrahamic faiths as follows.



The history of the diegetic revision of Abraham therefore suggests that Christians read the New Testament as retconning the Tanakh, the Old Testament as a reconstruction of that retconning, and the New Testament as partly expanding and partly retconning the Old Testament. Muslims read the Qur'ān as retconning the Tanakh and the Bible. Members of the Church of Jesus Christ of Latter-day Saints read the Book of Mormon as expanding the Bible. And there are also holdouts against each. Moreover these holdout communities have remarkable historical longevity, since the community of Bible holdouts, or Christians, and Tanakh holdouts, or Jews, persist to today.

Reading the history of Abraham's diegetic revision backward from its terminal points—the Qur'ān and the Book of Mormon—helps explain why each religious community reads its discourse as it does relative to the others. Though there are outliers, on the history terminating with the Qur'ān, Muslims read the Bible and the Tanakh as reporting (incorrectly) on Abraham, while Jews and Christians read the Qur'ān as not reporting on Abraham at all. On the history of diegetic revision terminating with the Book of Mormon, members of the Church of Jesus Christ of Latter-day Saints read the Bible and the Tanakh as reporting (incorrectly and incompletely) on Abraham, while Jews and Christians regard the Book of Mormon as not reporting on Abraham at all. The two histories then converge. Christians read the Tanakh as reporting (incorrectly and incompletely) on Abraham, while Jews read the Bible as not reporting on Abraham at all.

Finally, the diagram also helps explain community nomenclature. Christians (whether or not members of the Church of Jesus Christ of Latter-day Saints) do not call themselves ‘Jews’. That is because Christians read the New Testament as retconning the Tanakh. Christianity reinterprets Judaism. Muslims do not call themselves ‘Jews’ or ‘Christians’. That is because Muslims read the Qur’ān as retconning both the Tanakh and the Bible. Islam reinterprets Judaism and Christianity. Yet all members of the Church of Jesus Christ of Latter-day Saints call themselves ‘Christians’. This is because members of the Church of Jesus Christ of Latter-day Saints read the Book of Mormon as expanding the Bible. The Church of Jesus Christ of Latter-day Saints expands (former-day) Christianity. This suggests that a later religious community retains the name of an earlier community if the later community reads its central diegesis as expanding the discursively earlier diegesis. If the later community reads its central diegesis instead as retconning the discursively earlier diegesis, then it adopts a new name—ceding the old name to the holdouts.

Notes

1. We could have focused on other faiths. Because they read the same discourse, the Vedas, differently, we could have analyzed the Dharmic religions of Hinduism, Jainism, and Buddhism particularly. Hindus may regard the Vedas as reporting correctly, or applying mimetically, to the actual, or actually factual, world because they believe the Vedas’ concept of the unchanging soul. Jains and Buddhists may read the Vedas as reporting incorrectly or applying partly non-mimetically because Jains believe that there are souls that change, and Buddhists believe that there are no souls at all. Indeed Jain and Buddhist religious diegeses may have been diegetically revised in opposition to the Vedas, and some Jains and Buddhists may read their diegeses as retconning the Vedas. A clearer parallel to the Abrahamic faiths occurs within Buddhism itself. See note 12.
2. See Robert Audi (2011, chapter 3, §1) for different ways in which ‘faith’ functions in ordinary language and Anthony Kenny (1992) for an introduction to philosophical analyses of faith.
3. Having emotion as evidence for reporting correctly or applying mimetically (or some combination), and therefore having community members sometimes assume an a priori attitude against revision, may to some degree apply to other diegeses too. Maybe emotion in the form of intuition is evidence for diegeses concerning logical, ethical, and mathematical intuitionism, where members of such communities likewise have an a priori attitude against revision. Regardless, even if having these same properties as religious diegeses, for the respective intuitionist, diegeses concerning logic, mathematics, or ethics could have others overriding these—including the expectation that they be consistent with diegeses concerning science. Nonetheless, insofar as diegeses concerning logic or mathematics do share similarities with religious diegeses, they could all be regarded as accepted on faith (broadly construed).
4. Thus we bracket such discourses as the Talmud, Creeds and Encyclicals, Hadiths, and Doctrines and Covenants of the Church of Jesus Christ of Latter-day Saints and the Pearl of Great Price, respectively, and others.
5. For the Tanakh and the Bible, it is the New American Standard Bible; emphases and capitalizations within the quotations are original to the translation.

For the Qurʾān, it is the Saheeh International translation; bracketed text within the quotations are original to the translation. The Book of Mormon needs no translation—though, according to the Church of Jesus Christ of Latter-day Saints, originally it did, when Joseph Smith translated it from reformed Egyptian into English.

6. The documentary hypothesis identifies the Teachings as deriving from two other distinct discourses, the first written by an author known as ‘D’, for ‘Deuteronomy’, the sole book thought to be of that authorship, and ‘P’, for the “Priestly” writer(s), associated with the temple in Jerusalem. Other explanations of such contradictions are the supplementary hypothesis, according to which there was a single original discourse supplemented by additions but not other distinct discourses, and the fragmentary hypothesis, according to which there are no continuous source discourses.
7. Two libraries of clay tablets documenting the Canaanite faith were discovered in 1928 in the remains of the ancient city of Ugarit (Spar 2009).
8. In Chapter 5 we distinguished (c) as applying to normal science as (c_{ns}) and to revolutionary science as (c_{rs}). Because we argued that (c_{ns}), which is just (c), applies to normal science, while (b) applies to revolutionary science, we no longer need to distinguish (c) into (c_{ns}) and (c_{rs}).
9. Samaritans are Torah holdouts. While Jews read the other books of the Tanakh as variously retconning and expanding the Torah until they became a single discourse read as a single diegesis, Samaritans reject them, reading the Torah itself as complete, isolated, and definitive. And the Samaritan community does still exist.
10. ‘New covenant’ is similar to the name of John Locke’s (1690/1980) *Second Treatise of Government*. The first word of each is an adjective modifying the second word, a common noun. See Scott Soames (2003, chapter 5) on such “partially descriptive proper names.”
11. Because the 1951 edition of *The Hobbit* was not a new discourse relative to *The Lord of the Rings*, Tolkien could not have named the former something to indicate its diegetic relation to the latter. Had he been able to do so, then perhaps he would have named the 1951 edition *The Old Account of the Ring* because it details Bilbo’s diegetically earlier finding the ring, and *The Lord of the Rings* then *The New Account of the Ring* because it details Frodo’s diegetically later quest to destroy it. Indeed, in similar spirit yet reflecting publication order, “[Tolkien] and the other members of the Inklings, the group of friends who met to read and discuss each other’s works, called *The Lord of the Rings* ‘The New Hobbit’ for years” (Olsen 2012, 88, n.).
12. Theravāda and Mahāyāna Buddhism stand diegetically toward one another roughly as Judaism does toward Christianity. Mahāyānists may read the discursively later Mahāyāna *sūtras* as retconning the discursively earlier Pali canon. Theravādans may hold out against the retcon and read the Pali canon as complete, isolated, and definitive. Though, unlike Christians, Mahāyānists would not reconstruct discursively earlier diegeses as retconned by discursively later ones, they do call Theravāda itself ‘Hīnāyāna’, or the Lesser Vehicle, in contrast to ‘Mahāyāna’, or the Greater Vehicle. Instead of older and newer testaments, there are less important and more important means of transmission.
13. Members of the Church of Jesus Christ of Latter-day Saints may also read *History of the Church*, a semi-official history of the Latter-day Saints movement during Joseph Smith’s lifetime—composed by Smith, his associates, and Church historians—as retconning the Bible by revealing that Gabriel and Noah are the same individual, ‘Gabriel’ his angelic name, ‘Noah’ his mortal (3:338).

14. This is analogous to aspects of the history of Brontosaurus's diegetic revision. While Bakker's 1968 article retconned Riggs's 1903 article by reinterpreting dinosaurs as warm-blooded and avian, Bakker's 1998 article retconned his own 1968 article by reinterpreting Apatosaurus and Brontosaurus as distinct dinosaurs. Tschopp, Mateus, and Benson's 2015 article would also retcon Riggs's 1903 article by reinterpreting Apatosaurus and Brontosaurus as distinct dinosaurs. That is because the paleontological community overall held out against Bakker's 1998 article. Bakker's 1998 article was a diegetic dead end. The next diegetic revision bypassed it and revised the previous diegeses, which happened to be Bakker's own 1968 article. To that extent, Bakker's 1998 article is analogous to the Qur'ān. Members of the Church of Jesus Christ of Latter-day Saints rejected the Qur'ān as it retconned the Bible, just as Tschopp, Mateus, and Benson rejected Bakker's 1998 article as it retconned Bakker's 1968 article. The Book of Mormon went back and diegetically revised the Bible, just as Tschopp, Mateus, and Benson's article went back and diegetically revised Bakker's 1968 article. Hence discursively later diegeses—the Book of Mormon and Tschopp, Mateus, and Benson's article, respectively—bypassed a discursively intermediary diegesis—the Qur'ān and Bakker's 1998 article, respectively—and revised a discursively earlier diegeses—the Bible and Riggs's 1903 article, respectively.

Conclusion

“Those who cannot remember the past are condemned to repeat it” (1905/2011, 172). George Santayana wrote that in *Reason in Common Sense* to admonish his readers to learn from history.¹ We wrote *Revising Fiction, Fact, and Faith: A Philosophical Account* to encourage our readers to learn from the history of diegetic revision. We also hope to have demonstrated that those who can and do remember such history, rather than condemned, are instead privileged to engage in the philosophy of language and metaphysics (Chapters 1, 2, 3, and 4), and the history and philosophy of science (Chapters 4, 5, and 6) and religion (Chapters 7). In conclusion we consider lessons emerging from our own engagement.

Discourses and Diegeses

Foundational to *Revising Fiction, Fact, and Faith* was our distinction between discourses and diegeses. Three correspondingly foundational lessons emerge.

First, discourses are completed prose texts, while diegeses are the linguistic objects constituted when discourses are read. The discourse/diegesis distinction is a species of the purely physical/linguistic distinction. The constitutive relation between discourses and their corresponding diegeses is response-dependent. Any discourse is a diegesis if and only if a suitable subject under suitable conditions would respond to it as such, where such a subject is a reader.

Second, discourses and diegeses are diverse. Our examples include the 1937 edition of *The Hobbit*, the 1951 edition, and *The Lord of the Rings*. They include Ptolemy’s *Almagest*, Copernicus’s *De Revolutionibus*, Newton’s *Principia*, and Einstein’s articles about special relativity and *On Special and General Relativity*—as well as Locke’s “Great Astronomical Discoveries,” Tombaugh’s telegraph about Pluto, the International Astronomical Union’s “Resolution B5,” and Le Verrier’s letters about Neptune and about Vulcan. They include Kuhn’s *The Structure of Scientific Revolutions*. They include Marsh’s and Riggs’s articles; Bakker’s articles and books; Brookshire’s blog and NPR’s report; Tschopp, Mateus, and Benson’s article; and Herkewitz’s article. And they include the Tanakh,

Bible, Qur'ān, and Book of Mormon. *Revising Fiction, Fact, and Faith* is a discourse read as a diegesis too.

And third, the same discourse can be read as, and therefore be, different diegeses. Because discourses are thus diegetically pluripotent, diegeses are relative to communities of readers. When there is extensive overlap between various diegeses constituted by the same discourse when read by multiple readers, each such reading may be counted as “the diegesis.” Diegetic relativism is an undeniable aspect of our revisionary practices. It is metaphysically innocuous. And there are reasons to read discourses as particular diegeses.

Diegetic-Revisionary Kinds

Consistent with diegetic pluripotency and especially its implied diegetic fallibilism, discourses can be read as, and therefore be, diegeses that revise one another. Such discourses would be read as instances of diegetic-revisionary kinds. These kinds include rebooting, rebooted, retconning, retconned, expanding, expanded, holdout, and rejected diegeses. Four lessons emerge.

First, in a reboot, the rebooted diegesis is discursively earlier and the rebooting diegesis discursively later; they refer to different worlds, the former of which is rejected; the rebooting diegesis alludes to details from the rebooted diegesis; and the diegeses' individuals, objects, and events cannot interact, nor can their individuals be aware of the allusion. In a retcon, the retconned diegesis is discursively earlier and the retconning diegesis discursively later; they refer to the same world, which remains accepted; the retconning diegesis reinterprets details from the retconned diegesis; and the diegeses' individuals, objects, and events can interact, and the retconning diegesis's individuals can be aware of the reinterpretation. And, in an expansion, the expanded diegesis is discursively earlier and the expanding diegesis discursively later; they refer to the same world, which remains accepted; the expanding diegesis continues details from the expanded diegesis; and the diegeses' individuals, objects, and events can interact, and the expanding diegesis's individuals can be aware of their continuing.

Second, readers can hold out against reboots, retcons, and expansions. They would do so by reading the discursively earlier diegesis as complete, isolated, and definitive, and therefore as a holdout diegesis. In a holdout, the holdout diegesis is discursively earlier and the rejected diegesis discursively later; they refer to different worlds, the latter of which is rejected; the rejected diegesis alludes to details from the holdout diegesis; and the diegeses' individuals, objects, and events detailed cannot interact, nor can their individuals be aware of the allusion.

Third, reboots and holdouts are kinds of non-linear, and retcons and expansions are kinds of linear, revision. Non-linear revision involves

restarting a diegesis and either rejecting the original or the restart, respectively. Linear revision involves either reinterpreting or continuing a diegesis and either rejecting the original and accepting the reinterpretation or accepting both the original and the continuation, respectively.

And fourth, besides revisionary kinds of diegeses, there can also be revisionary kinds of diegetic details. Those would be individual details of diegeses regarded as rebooting, rebooted, retconning, retconned, expanding, expanded, holdout, or rejected. Regarding details themselves as diegetic-revisionary however may damage diegetic coherence.

Diegetic Logic and Semantic Dualism

Two lessons emerge from focusing on diegetic-revisionary kinds about diegetic logic and semantic dualism.

First, distinct semantic accounts of proper names explain the diegetic logic of reboots, retcons, expansions, and holdouts. They do so by explaining how kinds of diegetic revision function. Though each account has various versions, including causal ones that we identified, we concentrated on their core. The diegetic logic of reboots and holdouts is explained by descriptivism but not by referentialism. A proper name refers indirectly to its referent through the mediation of its associated descriptions, and the meaning of a proper name is exhausted by those descriptions. The diegetic logic of retcons is explained by referentialism but not by descriptivism. A proper name refers directly to its referent without the mediation of its associated descriptions, and the meaning of a proper name is exhausted by its referent and so independent of those descriptions. And the diegetic logic of expansions is explained by both descriptivism and referentialism.

Second, because referentialism cannot explain the diegetic logic of reboots or holdouts, and descriptivism cannot explain the diegetic logic of retcons, neither descriptivism nor referentialism can by itself explain the logic of all diegetic revision. Rather than competitors, descriptivism and referentialism are complimentary. We called this view ‘semantic dualism’.

Diegetic Auxiliary Kinds

Besides diegetic-revisionary, diegeses also come in diegetic auxiliary kinds, which supplement diegeses. Those kinds include reconstructions, derivative diegeses, and diegetic illustrations. Four lessons emerge.

First, discourses can be read as reconstructions of diegeses as revised by other diegeses in a way that permits an expansion where there otherwise could be none. Reconstructions are therefore possible of reboots and retcons but not of expansions.

Second, discourses can be read as deriving, or drawing, details from other diegeses by summarizing, simplifying, and systematizing them, thereby putting their diegetic details into what, for the requisite community, becomes canonical form. These are derivative diegeses.

Third, textbooks generally are derivative diegeses. For both Kuhn and us, science textbooks specifically are also reconstructions. For Kuhn, they are reconstructions of reboots, while, for us, they are reconstructions of retcons.

And fourth, diegeses can have corresponding diegetic illustrations, which fully or partly represent them. Illustrations are usually rendered in a medium different from the medium in which the corresponding discourse is rendered. They include such things as diagrams, displays, films, images, models, paintings, stamps, and toys.

Diegetic Kinds and Worlds

Besides diegetic-revisionary and diegetic auxiliary, diegeses come in diegetic kinds as well. These kinds include factual and fictional diegeses. Because discourses can be read with their diegetic kind bracketed, there can be bracketed diegeses too. And each of these kinds may also be read as religious diegeses. Five lessons emerge.

First, a fictional diegesis refers to a merely possible, or actually fictional, world. The world's being merely possible is its metaphysical status, and its being actually fictional its diegetic status. A fictional diegesis is one whose secondary world is distinct from its primary world, which is the actual, or actually factual, one. A factual diegesis refers to the actual, or actually factual, world. The world's being actual is its metaphysical status, and its being actually factual its metaphysical status. A factual diegesis is one whose secondary world is identical to its primary world, which is the actual, or actually factual, one.

Second, a bracketed diegesis is a discourse read with its diegetic kind bracketed. Readers bracket whether the diegesis refers to a merely possible, or actually fictional—or the actual, or actually factual—world. They therefore bracket whether the diegesis's secondary world is distinct from or identical to its primary world. Those reading discourses as bracketed diegeses focus on the diegeses' structures, including such things as style and plot.

Third, discourses read as diegeses can be read as referring to worlds by reporting correctly or incorrectly on them. A discourse read as a factual diegesis reporting incorrectly on the actual, or actually factual, world, reports correctly on a merely possible, or possibly factual, world. Though a fictional diegesis also reports incorrectly on some merely possible, or actually fictional, worlds, more philosophically interesting is its applying mimetically or non-mimetically to the actual, or actually factual, one. Mimetic applicability is the degree to which fictional diegeses or their

details are true in that world. Finally, a discourse read as a bracketed diegesis does not report correctly or incorrectly, or applying mimetically or non-mimetically, to the actual, or actually factual, world, at all.

Fourth, discourses read as religious diegeses are always also read as factual, fictional, or bracketed—by members and non-members of their communities. Communities coalescing around religious diegeses tend more to appeal to emotion as evidence for their diegesis than do communities coalescing around other diegeses. And holdouts tend to have an a priori attitude against the diegesis's revision, which leads to their communities tending to have remarkable historical longevity.

And fifth, besides kinds of diegeses, there can also be kinds of diegetic details. Those would be individual details of diegeses regarded as fiction, fact, or bracketed. Regarding details themselves as diegetic kinds however may damage diegetic coherence.

Kuhnian Correlates

While our categorization of diegetic-revisionary, diegetic auxiliary, and diegetic kinds are our own, correlative and other ideas occur in Kuhn's discourses as we read them. This should be unsurprising, since Kuhn aimed to provide a philosophical analysis of the history of scientific development, and we construed him as providing a philosophical analysis of the history of diegetic revision. Having discussed textbooks as reconstructions and derivative diegeses above, we summarize three other lessons emerging from Kuhn now.

First, we have made sense of where Kuhn and his critics disagree. Kuhn models normal science on expansions and revolutionary science on reboots. The image against which Kuhn rebels models revolutionary science on expansions. And Kuhn's referentialist revisers model revolutionary science on retcons.

Second, we have reason to model normal science from the reviser's perspective on expansions. We have reason to model revolutionary science from the reviser's perspective on retcons. And we have reason to model normal and revolutionary science from the holdout's perspective, the former of which Kuhn failed to consider and the latter of which he may have confused with the reviser's perspective, on holdouts.

And third, moving beyond mere correlates, because discourses read as factual diegeses are read as referring to the same one world—the actual, or actually factual—they can be involved only in retcons, expansions, or holdouts. Only that recognizes the role played by evidence in the history of scientific development. Because discourses read as fictional diegeses are read as referring to the same or different worlds—merely possible, or actually fictional—they can be involved in all of these as well as reboots. Evidence does not play the same role.

Philosophy of the History of Various Instances of Diegetic Revision

We have gone from foundational lessons and their applications to correlative and other ideas in Kuhn. Now we move to specific lessons emerging from the philosophy of the history of diegetic revision in astronomy and dynamics, paleontology, and the Abrahamic faiths.

First, many read Copernicus's *De Revolutionibus* as retconning Ptolemy's *Almagest*, Le Verrier's letter about Neptune as expanding Copernicus's *De Revolutionibus*, and Le Verrier's letter about Vulcan as expanding his letter about Neptune. Many read Le Verrier's letter about Neptune as expanding Newton's *Principia*. And many read Einstein's articles and *On Special and General Relativity* as retconning Newton's *Principia*, and Einstein's *On Special and General Relativity* particularly as retconning Le Verrier's letter about Vulcan. The history of the diegetic revision of astronomy and dynamics demonstrate that there is a line of evidence from the *Almagest* to *On Special and General Relativity*.

Second, many read Marsh's article mentioning 'Brontosaurus excelsus' as expanding his article mentioning 'Apatosaurus ajax'. Many then read Riggs's article as retconning each of Marsh's by renaming the now-reinterpreted single dinosaur 'Apatosaurus excelsus'. This is so even though books, films, models, and toys illustrated Riggs's article by naming its represented dinosaur 'Brontosaurus excelsus' or 'Brontosaurus' simpliciter. Next many read Bakker's earlier articles and books as retconning Riggs's article by reinterpreting *Apatosaurus excelsus*—popularly called 'Brontosaurus excelsus' or 'Brontosaurus'—as warm-blooded and related to birds. Popular catching up with professional nomenclature, many read Brookshire's blog and NPR's report as derivative diegeses claiming ambiguously that *Brontosaurus* never existed simpliciter and that *Brontosaurus* never existed as distinct from *Apatosaurus*. Regardless, models, stamps, and toys illustrated Bakker's earlier articles and books, which had been read as having retconned Riggs's. Few however read Bakker's later article, claiming that *Apatosaurus ajax* and *Brontosaurus excelsus* are distinct, as retconning Riggs's article. They instead held out against it, and so the article became a diegetic dead end. Many instead read Tschopp, Mateus, and Benson's article as retconning Riggs's and on different grounds reinterpreting *Apatosaurus ajax* and *Brontosaurus excelsus* as distinct. Finally, many read Herkewitz's article, though making ambiguous claims similar to those made by Brookshire's blog and NPR's report, as diegetically derived from Tschopp, Mateus, and Benson's.

And third, many Christians, including members of the Church of the Jesus Christ of Latter-day Saints, read the New Testament as retconning the Tanakh, the Old Testament as a partial reconstruction of the Tanakh as retconned, and the Old Testament as partially retconned by the New Testament directly. The Old and New Testament together comprise the

Bible. Those holding out against the retconning are Jews. Many Muslims read the Qur'ān as retconning the Tanakh and the Bible. Those holding out against all the retconning are Christians. Finally, many members of the Church of Jesus Christ of Latter-day Saints read the Book of Mormon as expanding the Bible. Those holding out against the expanding are Christians who are not members of the Church. These holdout communities have remarkable historical longevity.

The Diegetic Turn

Whether or not Santayana is right that “[t]hose who cannot remember the past are condemned to repeat it,” a final philosophical, indeed metaphysical, lesson emerges by remembering the recent philosophical past.

For much of the twentieth century, analytic philosophers maintained that analyzing language was the proper method of analyzing thought and reality. They took what Richard Rorty (1967/1992) called the “linguistic turn.”² Michael Dummett, arguably the most influential historian of analytic philosophy, connected language to thought:

Once the linguistic turn had been taken, the fundamental axiom of analytical philosophy—that the only route to the analysis of thought goes through the analysis of language—naturally appeared compelling.

(1993b, 122)

Ludwig Wittgenstein, arguably the most famous analytic philosopher, connected language to reality: “The limits of my language,” which he meant to limn, “mean the limits of my world” (1922/2010, 5.6), by which he meant his reality. And Donald Davidson, arguably the most systematic analytic philosopher, connected language to both: “The methodology of interpretation [of language] is, in this respect, nothing but epistemology,” and so the study of knowledge and thought, “seen in the mirror of meaning” (1984/2001, 169), and “in making manifest the large features of our language, we must make manifest the large features of reality” (199).

Though such statements are overstatements, something remains of their idea. One way of analyzing thought and reality is by analyzing linguistic objects, specifically discourses read as diegeses, which refer to individuals, objects, and events. Analyzing the history of the diegetic revision of Tolkien’s fiction illuminates thoughts as well as things about Bilbo and his world. Analyzing the history of the diegetic revision of paleontological fact illuminates thoughts as well as things about Brontosaurus and its world. And analyzing the history of the diegetic revision of the Abrahamic faiths illuminates thoughts as well as things about the Bible and its world.³ We do not contend that such a “diegetic turn” be as central

to philosophy as the linguistic turn was, of which the diegetic turn is a species. But neither should it be especially peripheral. Bilbo himself says:

It's a dangerous business . . . going out your door. You step onto the road, and if you don't keep your feet, there's no knowing where you might be swept off to.

(Tolkien 1954–55/1994, 83)

Using Tolkien's discourses as exemplars, we were swept off to analyses of fiction, fact, and faith, and their revision. We invite others to follow.

Notes

1. *Reason in Common Sense* is volume one of Santayana's five-volume *The Life of Reason: The Phases of Human Progress*, published in 1905 and 1906.
2. Rorty (1991, 50) attributes the phrase to Gustav Bergmann.
3. Kuhn comes close to taking this diegetic turn when he traces scientific development in terms of the history of diegetic revision.

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