Fictional Reality*

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Abstract

This paper defends a theory of fictional truth. According to this theory, there is a fact of the matter concerning the number of hairs on Sherlock head, and likewise for any other meaningful question one could ask about what's true in a work of fiction. We argue that a theory of this form is needed to account for the patterns in our judgments about attitude reports that embed fictional claims. We contrast our view with one of the dominant approaches to fictional truth, which originates with David Lewis. Along the way we explore the relationship between fiction, counterfactuals, and vagueness.

1 Introduction

Sherlock Holmes first meets his assistant Dr. Watson in Sir Arthur Conan Doyle's *A Study in Scarlet*. Holmes has some number of hairs on his head at the time of this meeting. Must it follow, then, that one of the following claims expresses a truth (Lewis, 1978, 42)?

(1) a. At the moment he first meets Watson, Holmes has an odd number of hairs on his head.

b. At the moment he first meets Watson, Holmes has an even number of hairs on his head.

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A Study in Scarlet does not explicitly state the exact number of hairs on Holmes's head. Moreover, it seems safe to assume that, at the time of writing, Sir Arthur Conan Doyle had no thoughts or intentions with respect to this matter either. As such, the question of whether Holmes has an odd or even number of hairs on his head at the time of meeting Watson seems to admit no determinately true answer. One might conclude that it has no true answer at all.

(1a) and (1b) are paradigm cases of *fictional indeterminacy*, the central topic of this paper. For the most part we'll leave the notion at an intuitive level, and allow our judgments about examples to guide our conception of the phenomenon. But the rough idea is that a fictionally indeterminate claim is a claim about the events of a work of fiction that is left "unsettled" by what's explicitly said or depicted in the work of fiction, what the author intended or believed to be true in the work of fiction, and so on.[1]

We follow many theorists in assuming that fictional indeterminacy—like other forms of indeterminacy—carries an epistemic constraint: there are in-principle barriers to knowing that a fictionally indeterminate claim expresses a truth.[2] Given the actual historical facts concerning Sir Arthur Conan Doyle and *A Study in Scarlet*, no amount of textual or psychological research will reveal which of (1a) or (1b) is true. So neither can be known to express a truth.

But knowledge is one thing, truth another. Could a fictionally indeterminate claim like (1a) or (1b) be true *simpliciter*, even if not knowably so?

This is the question that will occupy us for most of the paper. We seek to make progress on it by considering what other rational attitudes one can take toward fictionally indeterminate claims. For example, can one believe the propositions expressed by these claims? Assign meaningful subjective probabilities to them? Wish they were true? Wonder whether they are true?

In what follows, we provide detailed answers to these questions. We will argue that the best way to capture the patterns in the answers is to adopt an account on which the semantic value of a fictional statement is determined by how things go at a single, unique world—the relevant "world of the fiction". Since worlds settle every (precise) question, on the theory we defend there *is* a fact of the matter as to how many hairs are on Holmes's head. It's just that no one—not

[1] We'll say more to sharpen this notion in §4 and §10. But we want to note here that we are *not* assuming that the distinction between determinate and indeterminate fictional claims has something to do with vagueness—at least not if 'vagueness' is understood in terms of the phenomenon underlying Sorites puzzles. We consider a vagueness-theoretic approach to the distinction in §10, but ultimately argue that it is problematic.

[2] For a contrasting perspective (at least with respect to indeterminacy due to vagueness), see, for example, Dorr 2003 and Barnett 2010.

even Sir Arthur Conan Doyle himself—is in any position to know what these facts are. As such, fictional indeterminacy entails neither falsity nor the absence of a truth-value; the question of whether Holmes has an odd number of hairs on his head is as factual as the question of whether he is a detective.

Philosophical orthodoxy takes such an account of fictional truth to be obviously untenable. For instance, both Lewis (1978, 42) and Proudfoot (2006, 11) call views akin to the one we defend "absurd".[3] Nonetheless, we believe that such an account is the best available when it comes to explaining the patterns in our rational attitudes toward indeterminate fictional claims. These claims are legitimate objects of curiosity and wonder, and it is far from clear how to make sense of this and other related facts on the standard assumption that sentences like (1a) and (1b) are invariably false or truth-valueless.

Most of the paper will be spent explaining and defending these ideas. But we will also argue that our account offers an interesting perspective on a number of issues in the metaphysics of fiction. These include questions about the grounds of fictional indeterminacy; the connections between fictional truth and counterfactual truth; whether fictional indeterminacy is a species of vagueness; and the nature of fictional change.

2 Varieties of fictional claims

By way of making the subject matter and methodology of our project clearer, we'll start with some distinctions between statements about fiction.

As Kripke (2013) notes, in making a statement about a work of fiction, there seem to be two different kinds of claims we might be expressing: either a claim about matters *external* to the fiction, or a claim about matters *internal* to it.[4] As a rough gloss, the first kind of claim is about the fiction itself—the fiction as an abstract entity created by a particular author. The second kind of claim, by contrast, is about what's true *in* or *by the lights of* the fiction.

The distinction is best grasped through examples. Paradigm cases of fictional claims that are most naturally interpreted externally include:

(2) a. Sherlock Holmes is a fictional character.

b. Hamlet isn't a person, he's the protagonist of *Hamlet*.

[3] As far as we know, Woods (2018) is the only other proponent of a view on which exactly one of (1a) or (1b) expresses a truth. However, Woods doesn't provide a general theory of fictional discourse (since he claims that it is not possible to do so), and is motivated by quite different considerations from our own.

[4] See also van Inwagen 1977, Lewis 1978, and Salmon 2011.

c. Michael Mann's *Heat* is based loosely on the true story of Detective Chuck Adamson's pursuit of Neil McCauley.

And paradigm examples of fictional claims that are most naturally interpreted internally include:

(3) a. Sherlock Holmes lives on Baker Street.

b. [*Hamlet* features a fictional play called *The Murder of Gonzago*.] Hamlet is a person, but Gonzago isn't.[5]

c. Tony Soprano is the most powerful criminal in New Jersey.

We take it as a methodological starting point that, on their natural readings, the internal claims in (3) express true propositions.[6] After all, these claims are assertable in a wide range of contexts. If you were asked 'Where does Sherlock Holmes live?' or 'Can you tell me some things about Sherlock Holmes?', it would be perfectly acceptable to utter (3a) in reply. These claims can also be felicitously embedded under factive operators such as 'know', 'it's true that', and 'forget', as in:

(4) a. I know that Sherlock Holmes lives on Baker Street.

b. It's true that Hamlet is a person, but false that Gonzago is.

c. I had forgotten that although Tony Soprano is the most powerful criminal in New Jersey, he's not the most powerful criminal in the Tri-State area.

Thus, to deny that claims like (3) express true propositions is to commit oneself to a view on which otherwise competent speakers are systematically mistaken in the ways in which they ordinarily think and talk about fiction. We see little to recommend such an aggressive departure from the basic principles of interpretive charity.

In addition to the practice of making external and internal fictional claims, there is also a practice of making fictional claims using explicit natural language "fiction operators", like 'in the fiction', 'according to the fiction', and so on. For example, consider the following claims:

(5) a. According to *A Study in Scarlet*, Sherlock Holmes lives on Baker Street.

[5] This example is due to Kripke (2013).

[6] Likewise for the external claims in (2), but this will be less important in what follows.

b. By the lights of *Hamlet*, Hamlet is a person, but Gonzago isn't.

c. In *The Sopranos*, Tony Soprano is the most powerful criminal in New Jersey.

The kinds of facts that would seem relevant to the truth of these claims appear similar to the kinds of facts that would seem relevant to the truth of internal claims like those in (3), and unlike the kinds of facts relevant to the truth of external claims like those in (2). However, we will *not* be assuming that our intuitive judgments about (3) and (5) are reflective of a unitary phenomenon (Bowker 2021). As we intend to use the term 'internal fictional claim', it is to be understood exclusively via ostension to our intuitive judgments about sentences like those in (3)—sentences that do not contain any explicit natural language operators. As such, we leave it as an open possibility that a certain fictional claim p could be true on its internal reading even when a sentence like ⌜According to the relevant work of fiction, p⌝ is false on all of *its* available readings.[7]

With these distinctions in mind, our interest in this paper is with the nature of *internal* fictional truth.[8] Why is it true that Sherlock Holmes lives on Baker Street, but not true that Sherlock Holmes is from Canada? And how should we think about internal claims that seem entirely indeterminate, like (1a) and (1b)?

3 The modal approach to fictional truth

Consider again a fictional claim like (3a):

(3a) Sherlock Holmes lives on Baker Street.

(3a) seems straightforwardly true. However, standard assumptions in semantic theory imply that (3a) is true only if (i) the entity denoted by 'Sherlock Holmes' exists and (ii) this entity has the property expressed by 'lives on Baker Street'. We are comfortable thinking (i) holds: it is plausible that anything that is in

[7] For further discussion of the semantics of explicit natural language fictional operators, see, for example, Sainsbury 2014, Dohrn 2015, Voltolini 2019, and Semeijn 2023. Relatedly, we intend to remain neutral on claims involving the ideology of "fictionality", as in 'It is fictional that Sherlock Holmes is a detective'—see Walton 1990, 35-43, Woodward 2011b, and Kroon & Voltolini 2024 for discussion. In particular, we will not be assuming that "fictionality" claims are synonymous with internal fictional claims like those in (3).

[8] Unless explicitly stated otherwise, for the rest of the paper the reader should interpret our talk of 'fictional claims' and 'fictional truth' as shorthand for 'internal fictional claims' and 'internal fictional truth', with the interpretation of these notions anchored in intuitive judgments about sentences like (3).

the extension of 'is a fictional character' is something that exists, and Sherlock Holmes is in the extension of 'is a fictional character' if anything is.[9] It's (ii) that creates a problem. Even if we grant that Sherlock Holmes exists, there is no such "person" who actually lives on Baker Street. So the relevant interpretation of (3a) cannot be one in which we look to the actual extension of 'lives on Baker Street' in determining the sentence's truth-value.

To solve this problem, theorists have adopted a framework for modeling truth in fiction that goes back to Lewis (1978).[10] The central idea is that internal fictional claims are *implicitly modalized external claims*. That is to say: on its internal reading, a fictional claim is prefixed by a silent operator that shifts the evaluation of its (externally interpreted) prejacent to some number of non-actual possibilities.

Where f is a fictional story—for example *A Study in Scarlet* as written by Sir Arthur Conan Doyle—the corresponding operator can be represented as $\Box_f$. To a first approximation, $\Box_f$ shifts evaluation to the worlds "compatible with the fiction f". These worlds can be represented by the set $\text{Fic}_{f,w}$: the set of worlds compatible with the fiction f at w. Regarding the metaphysical status of these worlds, it is left open whether they represent genuine metaphysical possibilities. However, they are usually assumed to be both *consistent* and *complete*. That is: for any world w and proposition p, exactly one of p or $\neg p$ is true at w.[11]

The modal approach raises an issue that is worth addressing immediately. Given that $\Box_f$ is an implicit operator, a surface-form sentence like 'Holmes lives on Baker Street' is ambiguous: either it could denote an unmodalized claim (on its external reading), or it could denote a modalized claim prefixed by $\Box_f$ (on its internal reading).[12] To avoid this ambiguity, we will from here on out represent logical forms with a designated sans serif font, as in: p. So, although 'Holmes lives on Baker Street' exhibits an internal/external ambiguity, $\mathsf{Holmes\ lives\ on\ Baker\ Street}$ does not: the latter always expresses the "unmodalized" proposition that Holmes lives on Baker Street (equivalently: the proposition expressed by 'Holmes lives on Baker Street' on its external reading). We will also freely abuse notation so that an expression in sans serif will stand both for a (disambiguated) logical form, as well as the proposition expressed by that form. Given these conventions, the internal reading of (3a) can be represented by (6) (where 'SS'

[9] This is not to say this assumption is incontestable—see Bacon 2013 for discussion.

[10] For recent developments of the framework, see, for example, Hanley 2004, Badura & Berto 2019, and García-Carpintero 2022.

[11] We will revisit this assumption in §11.

[12] As a reviewer points out, strictly speaking there is more than this two-way ambiguity: fictional claims admit at least as many internal readings as there are possible values of the parameter f. But we set aside this complication in what follows, since in all of our examples it will be clear what the relevant value of f is.

picks out *A Study in Scarlet*):

(6) $\Box_{SS}$Holmes lives on Baker Street

Here, then, is the bare-boned analysis of the modal operator $\Box_f$:

Modal analysis

$\Box_f \mathsf{p}$ is true at w iff $\forall w' \in \text{Fic}_{f,w}$: p is true at w'.

Given the modal analysis, (6) is true at w if and only if every world in $\text{Fic}_{SS,w}$ is a world in which Holmes lives on Baker Street is true (equivalently: is a world in which it's externally true that Holmes lives on Baker Street).

We will be taking the modal analysis for granted in what follows. By our lights, the main attraction of the modal framework is that it allows us to state and assess predictions of various theories of fictional truth in a manner that is reasonably precise. As we will see in the next few sections, for example, a number of debates around the nature of fictional truth can be modeled as debates about the *cardinality* of the set $\text{Fic}_{f,w}$.

However, the claim that indeterminate fictional statements can often be true—our central thesis—is not tied in any essential way to the modal approach.[13] The argument for this thesis is grounded in the patterns in our intuitive judgments about fictional claims—patterns that any good theory of fictional truth ought to be able to explain. The modal view happens to be a particularly useful way of modeling the logical principles that underly them.

These points aside, the modal approach *on its own* does not make all that much headway on the issue of fictional truth. For all it says is that an internal fictional statement is true just in case the proposition expressed by the statement (on its external reading) is true at all the worlds "compatible with the relevant fiction". But which set of worlds is that? To answer this question, we'll start by introducing a notion that will be important in much of what's to come.

4 Principal fictional truth

It is common for theorists of fictional truth to distinguish between the *explicit* truths of a fiction f, on the one hand, from the *implicit* truths of f, on the

[13] Alternatives to the modal approach include Meinongian views (Parsons 1980, Sylvan 1980, Zalta 1983, Jacquette 1989), contextualist theories (Predelli 2008 Antonsen 2020), and "make-believe" theories (Currie 1990, Walton 1990, Byrne 1993, Gatzia & Sotnak 2014, Bowker 2021).

other.[14] Put roughly, the explicit fictional truths are the fictional claims that are true in virtue of that which is explicitly stated or depicted in f. A paradigm example of an explicit fictional truth (in *A Study in Scarlet*) is the claim that Holmes is a detective. The implicit fictional truths, by contrast, are simply the fictional truths of f that are not explicit fictional truths. A paradigm example is the claim that Holmes has two nostrils—never explicitly stated (at least not in *A Study in Scarlet*), but true nonetheless.[15] Taken together, the truths of a work of fiction are exhausted by its explicit and implicit truths.

Given this background, it will be helpful to introduce a category of fictional truth that cross-cuts the explicit/implicit divide: *principal* fictional truth. At an intuitive level, the principal truths of f are the claims that f is straightforwardly committed to. More substantively, the principal truths of f are the fictional claims that can be *known* to be in true f—at least in principle. This will include all of the explicit truths of f, as well as at least some of its implicit truths.

These glosses on principality are admittedly vague. As such, we believe the notion is best grasped through examples. So here are some paradigm cases of sentences that report principal fictional truths:[16]

(7) a. Sherlock Holmes is a detective.

b. Hamlet has two nostrils.

c. Ignatius Reilly believes the modern world is lacking in theology and geometry.

d. Elizabeth Bennett was born many years after the death of Caesar.

e. The disease Katerina Ivanovna suffers from is tuberculosis.

And here are some paradigm cases of sentences that do *not* report principal fictional truths:[17]

[14] For discussion of this distinction see, for example, Friend 2017, Motoarc 2017, Badura & Berto 2019, Stokke 2021, Franzén 2021, and Skow 2022. Note that some theorists use the terms 'primary' and 'secondary' where we use 'explicit' and 'implicit'.

[15] Though see D'Alessandro 2016, who maintains that the set of implicit fictional truths is always empty.

[16] These examples are about, respectively, *A Study in Scarlet*, *Hamlet*, *A Confederacy of Dunces* (its protagonist, Ignatius Reilly, often complains that the modern world has lost the medieval values of "theology and geometry"), *Pride and Prejudice* (the novel is set in England between the years 1811 and 1812), and *Crime and Punishment* (the character Katerina Ivanovna is described as having a serious illness that gives her flushed cheeks and a persistent, bloody cough—see Franzén 2021 for discussion of this particular example).

[17] Williams & Woodward (2019) discuss a number of other examples of fictional claims that we would describe as failing to report principal fictional truths, including the claim that Deckard is a replicant (in the original *Blade Runner* film) and the claim that Juliet has blue eyes (in *Romeo and Juliet*). Williams & Woodward refer to these examples as instances of "fictional incompleteness".

(8) a. Holmes has an odd number of hairs on his head.

b. Hamlet was born on a Tuesday.

c. Ignatius Reilly has tried reading *The Critique of Pure Reason*.

d. Elizabeth Bennett eventually dies in her 70s.

e. Raskolnikov has eczema.

These examples suggest some heuristics for the application of the notion of principality. Generally speaking, if a work of fiction explicitly says or depicts some claim, then that claim is a principal fictional truth of that fiction—hence (7a) and (7c).[18] But explicitness is not a precondition on principality: certain implicit fictional truths can be among the principal truths as well. For example, some claims might count as principal fictional truths not because they are explicitly stated or depicted, but because the author of the fiction *intended* or *believed* them to be true in the fiction, or because they are obvious consequences of the things the author intended or believed to be true in the fiction. We take (7b) and (7d) to be suggestive of this possibility. Finally, it is plausible that some claims are principal fictional truths simply because they are needed to make the story "sufficiently realistic", modulo the constraints imposed by the other conditions. This seems to be the lesson of (7e), given that Dostoevsky had no idea that consumption was caused by the tuberculosis bacterium (Franzén 2021; see also Friend 2017).[19]

These heuristics aside, we intend to treat the category of a principal fictional truth essentially as a black box. We do not have an algorithm for distinguishing the fictional claims that are principal truths from those that are not—or at least not one that goes beyond our general capacity to distinguish fictional claims whose truth value is knowable from those whose truth value is not.[20] But our sense is that the combination of this intuitive epistemic distinction

[18] We say 'generally speaking' because some works of fiction have unreliable narrators, while others describe moral impossibilities and other sources of so-called "imaginative resistance". For more on the first issue, see Currie 1990, Walton 1990, and Maier & Semeijn 2021. And for more on the second, see Gendler 2000, Weatherson 2004, and Altshuler & Maier 2020. We note that works of fiction that exhibit these phenomena may turn out not to have a one-to-one correspondence between their explicit *claims* and their explicit *truths*.

[19] A further possible source of principal truth involves so-called "genre conventions", which include claims like: that zombies stumble rather than run, that dragons breathe fire, and so on. See Woodward 2011b for helpful discussion. We leave open whether this category of truths can be subsumed by those that stem from the beliefs/intentions of the author.

[20] We might put the point in Walton's terms (1990, 139):

> Often it just strikes us that, given the words of a novel or the paint on a stretch of canvas, such and such is [true in the fiction]. Insofar as we do have reasons, what we are conscious of being guided by is a diverse assortment of particular considerations which seem somehow reasonable in one or another specific case.

and the motivating examples makes the notion clear enough to be theoretically useful.

With that in mind, from here on out we will make the substantive assumption that the principal fictional truths are all and only the *determinate* fictional truths. In particular: p is fictionally indeterminate (in f) if and only if neither p nor $\neg\mathsf{p}$ is a principal truth (of f).[21]

We will also use the notion of principality to state a minimal constraint on $\text{Fic}_{f,w}$. Letting $\text{P-Fic}_{f,w}$ be the set of worlds compatible with all the *principal* truths of f at w, we can say that $\text{Fic}_{f,w} \subseteq \text{P-Fic}_{f,w}$. In words: anything that is entailed by a principal fictional truth is a fictional truth simpliciter.

The relevant question is whether $\text{Fic}_{f,w} = \text{P-Fic}_{f,w}$. Are the fictional truths all and *only* those that are entailed by the principal fictional truths?

5 The standard analysis

Proponents of what we will call the *standard analysis* of fictional truth answer this question in the affirmative: the fictional truths are all and only those that are entailed by the principal fictional truths.[22]

Standard analysis

$\Box_f\mathsf{p}$ is true at w iff $\forall w' \in \text{P-Fic}_{f,w}$: p is true at w'.

The canonical defense of the standard analysis is due to Lewis (1978), though there have been a number of refinements since.[23] Our arguments target rather

[21] A reviewer suggests that the right-to-left direction of this biconditional could fail for reasons of contingent existence. For instance, proponents of "singular propositions" could maintain that if proposition p is about Holmes (for example, $\mathsf{Holmes\ is\ a\ detective}$), and if the proposition $\mathsf{Holmes\ exists}$ is false in f, then neither p nor $\neg\mathsf{p}$ is a principal truth of f. But intuitively it does not follow that p (or $\neg\mathsf{p}$) is fictionally indeterminate (in f)—at least not in the way (1a) ('Holmes has an odd number of hairs on his head') is fictionally indeterminate (in *A Study in Scarlet*). For simplicity, we will suppress these sorts of complications over the course of our discussion.

[22] The standard analysis is so-called because it makes the "standard" prediction about the semantic value of fictionally indeterminate claims, which is that they cannot be true. It is worth emphasizing just how widespread this prediction is. For instance, theories in the tradition of Walton (1990) are committed to maintaining that indeterminate fictional claims like (1a) and (1b) invariably fail to express truths. This is because on Walton's view (put roughly), p is true in a fiction f if and only if those engaged with f are supposed to imagine that p is true. Since there is clearly no prescription to imagine the exact number of hairs on Holmes's head when engaging with *A Study in Scarlet*, neither (1a) nor (1b) can be true on a view of this form (compare Williams & Woodward 2019). *Mutatis mutandis* for any other fictional claim that fails to report a principal fictional truth.

[23] See, for example, Hanley 2004, Proudfoot 2006, Badura & Berto 2019, and García-Carpintero 2022 for a representative sample. It is worth noting that proponents of the standard analysis do not state their view in terms of the notion of principality (or the set P-Fic). However, given the examples we have used to characterize the class of principal truths, we see little reason to think anything is lost in translation to our idiom.

general features of the standard view, so we'll paint with a broad brush in what follows.

Lewis, like many other theorists of fictional truth, writes as if it's obvious that indeterminate fictional claims like (1) and (8) cannot report truths (1978, 42; see also Proudfoot 2006, 11):

> Is the world of Sherlock Holmes a world where Holmes has an even or an odd number of hairs on his head at the moment when he first meets Watson? What is Inspector Lestrade's blood type? It is absurd to suppose that these questions about the world of Sherlock Holmes have answers.

What seems to motivate Lewis's thinking here is the combination of two ideas: (i), the basic observation that nothing about *A Study in Scarlet* or the psychological state of Sir Arthur Conan Doyle could plausibly settle the answers to these questions one way or the other. And (ii), the intuition that if the truth of a fictional claim cannot be grounded in these factors, then that claim cannot be among the truths of the relevant work of fiction.[24] Hence the identification of fictional truth with principal fictional truth.

To see how the standard analysis is working in more detail, consider (1a). By hypothesis, (1a) is true if and only if $\Box_{SS}$Holmes has an odd number of hairs on his head is true. Thus, according to the standard analysis, (1a) is true if and only if: $\forall w' \in$ P-Fic$_{SS}$, Holmes has an odd number of hairs on his head is true at w'. But Holmes has an odd number of hairs on his head is not among the principal fictional truths of *A Study in Scarlet*. So $\exists w' \in$ P-Fic$_{SS}$ such that Holmes has an odd number of hairs on his head is false at w'. This entails $\neg\Box_{SS}$Holmes has an odd number of hairs on his head is true. Thus, (1a) is false.

The analysis goes through in essentially the same way with (1b) and the examples in (8). Each of these is a claim of the form $\Box_f$p, where p is not among the principal truths of f. So, by the lights of the standard analysis, each of these claims must be false.

In fact, the standard analysis is committed to something stronger: not only are the claims in (1) and (8) all false, they are all *knowably* false. In the case of (1a)/(1b), anyone sufficiently familiar with *A Study in Scarlet* knows that the question of how many hairs are on Holmes's head is left unsettled by the

[24] There are moments where Lewis seems to flirt with the idea that fictional claims that do not report principal truths are neither true nor false (see especially Lewis 1978, 43). We find it difficult to square what he says in these passages with the actual analyses he gives later in the paper. In any event, in §7.2 we consider and argue against variants on the standard analysis that pursue this line.

sorts of factors that determine the principal truths: what's explicitly said in the story, Sir Arthur Conan Doyle's beliefs and intentions, and so on. It follows that anyone sufficiently familiar with *A Study in Scarlet* should know that neither the claim that Holmes has an odd number of hairs on his head nor the claim that he has an even number of hairs on his head is a principal truth. Thus, if the standard analysis correct, then such a person can know that both (1a) and (1b) are false.

The question is whether this is a good prediction. In the next section we present a range of observations suggesting it is not. The moral we will draw from these observations is that any good theory of truth in fiction will have to allow that the fictional truths vastly outstrip the principal fictional truths.

6 Attitudes toward fiction

In this section, we present the data that ultimately motivates our account of fictional truth. Our primary example comes from the television series *JAG*. In the final episode, the two protagonists Mac and Harm are engaged to be married, but have been assigned jobs in different countries. They agree that one of them will resign from their position in order to join the other, depending on the flip of a fair coin tossed by their friend, Bud. If the coin lands heads, Mac will join Harm; and if it lands tails, Harm will join Mac. The coin is flipped, but the show ends dramatically with the coin in mid-air.[25]

Given these facts about *JAG*, we take it that both (9a) and (9b) fail to express principal fictional truths:

(9) a. Bud's coin landed heads.
b. Bud's coin landed tails.

After all, neither is settled by any of what's explicitly depicted in the show; nor is either plausibly an obvious consequence of anything that's depicted; nor is either needed to make the events of the show sufficiently realistic. And we will assume, perhaps counterfactually, that the writers of *JAG* never had any intentions or beliefs with respect to the outcome of the flip either: they finished writing the final scene, and then never thought about the events of *JAG* again.[26]

[25]The final scene of the show can be seen here: https://en.wikipedia.org/wiki/JAG_(TV_series)#/media/File:JAGcoin.png.

[26]We also assume that the writers intended that Bud's coin landed either heads or tails, and thus that it didn't land on its side, wasn't destroyed mid-air, and so on.

The question we now wish to ask is this. Given that you know that neither (9a) nor (9b) reports a principal fictional truth of *JAG*—that both are thoroughly unsettled by that which is explicitly stated or otherwise depicted in the show—what attitudes can you rationally hold towards these claims?

(For brevity's sake we'll focus on attitudes toward (9a). Given the symmetries of the example, we see no harm in assuming that the range of attitudes you can rationally take toward (9a) are exactly those you can take toward (9b).)

6.1 Epistemics

Unsurprisingly, knowledge ascriptions sound uniformly terrible:

(10) a. ✗ I know that Bud's coin landed heads.

b. ✗ I know whether Bud's coin landed heads.

Our intuitive judgment about (10a) is to be expected given that (9a) is a paradigm case of an indeterminate fictional claim. Whatever else we know about such claims, we know that we cannot know them to express truths. So (10a) must be false.

Likewise, to our ears, (10b) seems problematic for essentially the same reason (10a) is. You can't know that Bud's coin landed heads, and you can't know that it landed tails. So you can't know how it landed. But if you can't know how it landed, then how could you know whether it landed heads?[27]

Notice as well that the reasoning here is transparent: anyone who knows that it's indeterminate how Bud's coin landed can reason in the way we just did to the conclusion that they don't know whether Bud's coin landed heads. So (10a) and (10b) aren't just false, they're *knowably* false.

6.2 Doxastics

So much for knowledge ascriptions. What about belief ascriptions? This depends on what is expressed by 'belief' (Goodman & Holguín, 2022). If it expresses a strong doxastic attitude along the lines of what is expressed by 'is sure' or 'is certain', then the belief ascriptions pattern in the way of the knowledge ascriptions:

[27] The claim that no one knows whether Bud's coin landed heads is further supported by a piece that appeared in *Country Living* whose headline was '*NCIS: LA* Will Finally Reveal Who Won the Coin Flip on the *JAG* Finale' (https://www.countryliving.com/life/entertainment/a27396842/jag-who-won-coin-flip/). As the author Megan Stein points out, '...the show decided to leave us in suspense, as we never found out if it was heads or tails'.

(11) a. ✗ I am sure that Bud's coin landed heads.

b. ✓ I'm not sure whether Bud's coin landed heads.[28]

These judgments can be further bolstered given a natural assumption about the relationship between knowledge and surety, which is that if one knows that one doesn't know whether p, then if one is rational, one is not sure whether p, and thus not sure that p (Unger 1975, Williamson 2000, Goodman & Holguín 2022). Thus, since one knows that (10b) is false, it follows that (11a) is false and (11b) is true.

Consider now the weaker interpretations of 'believes', on which it expresses a doxastic attitude along the lines of what is expressed by 'thinks' (Hawthorne *et al.* 2016, Dorst 2019, Rothschild 2020, Holguín 2022). Holding fixed the details of the *JAG* story, the relevant report continues to seem problematic:

(12) ✗ I think that Bud's coin landed heads.

But here the diagnosis is different. Unlike the attitude of being sure, the attitude of thinking is compatible with known ignorance: even if you know that for all you know you'll win the upcoming lottery, it remains perfectly reasonable for you to think that you won't. But, intuitively, thinking that a proposition is true requires having *some* reason to favor that proposition over the relevant alternatives.[29] And in the case of Bud's coin, one has no reason to think the coin landed heads, and also no reason to think it didn't.

However, now suppose *JAG* had instead ended with the flip of a coin that has a 2:1 bias in favor of heads, but where again the result is neither explicitly nor implicitly depicted. In this case the analog of (12) seems perfectly acceptable:

(13) ✓ I think that Bud's biased coin landed heads.

So can one *believe* indeterminate fictional claims? Yes and no. If 'believe' is interpreted strongly, then no. If 'believe' is interpreted weakly, then in at least in some cases, yes.

Similar points go for the attitude of doubting:

(14) a. ✗ I doubt that Bud's coin landed heads.

b. ✓ I doubt that Bud's biased coin landed tails.

[28] Here we use a (felicitous) negated surety ascription, since 'I'm sure whether Bud's coin landed heads' is ungrammatical (Mayr 2018, van Gessel *et al.* 2018).

[29] For further discussion of the exact form of these sorts of norms, see Holguín 2022, Dorst & Mandelkern 2023 and Skipper 2023.

Here we assume that to doubt that p is to think that $\neg\mathsf{p}$ (Anand & Hacquard, 2013). Since you have no reason to think Bud's fair coin didn't land heads, you cannot rationally doubt that Bud's fair coin landed tails. But since you do have reason to think that Bud's *biased* coin landed heads, you *can* rationally doubt that Bud's biased coin landed tails.

6.3 Subjective probability

What about some of the more quantitative doxastic attitudes? There appears to be no barrier to rationally assigning non-zero subjective probabilities to indeterminate fictional claims.

(15) a. ✓ It's .5 likely that Bud's coin landed heads.

b. ✓ It's twice as likely that Bud's biased coin landed heads as it is that it landed tails.

To our ears both reports are perfectly felicitous. In the case of (15a), you know that in *JAG*, Bud's fair coin is flipped. You know that *JAG* itself does not explicitly settle the question of how it landed, and that the writers of the show had no intentions with respect to this question either. You also know that a fair coin—whether here or in the world of *JAG*—is just as likely to land heads as it is to land tails. So it seems perfectly reasonable to have .5 credence that Bud's coin landed heads.

Note too that even in cases where it's difficult to assign particular credences to the propositions expressed by fictionally indeterminate claims, often we can still make comparative likelihood judgments about them.[30] For example, although it's difficult to say what likelihood ought to be assigned to claims like (8c), ('Ignatius Reilly has tried reading *The Critique of Pure Reason*') and (8d) ('Elizabeth Bennett eventually dies in her 70s'), it is to our ears perfectly felicitous to say things like:

(16) a. ✓ It is more likely that Ignatius Reilly has tried reading *The Critique of Pure Reason* than that he has tried reading *Fact, Fiction, and Forecast*.

b. ✓ It is more likely that Elizabeth Bennett eventually dies in her 70s than that she lives to be 110.

[30] Todd (2021, 142) notes that comparative probability claims involving indeterminate fictional claims can be felicitous.

6.4 Inquisitives

Next we turn to inquisitive attitudes. We agree with others in finding it reasonable to wonder or be curious about indeterminate fictional claims:

(17) a. ✓I wonder whether Bud's coin landed heads.
b. ✓I wonder whether Deckard is a replicant.[31]

(18) a. ✓I'm curious how Bud's coin landed.
b. ✓I'm curious about what day of the week Holmes was born on.

6.5 Bouletics

Finally, we turn to some bouletic attitudes—in particular, 'wish' and 'hope'. Interestingly, indeterminate fictional claims seems to be uniformly *un*acceptable under 'wish':

(19) a. ✗I wish that Bud's coin had landed heads.
b. ✗I wish that Bud's coin had landed something other than heads.

This is not because there is a general prohibition on holding bouletic attitudes toward claims about what happens in a work of fiction. It is perfectly felicitous to report oneself as wishing that a *principal* fictional truth were otherwise not true:

(20) ✓I wish that Bud's coin hadn't been flipped at all.

Instead, the infelicity of (19a) and (19b) seems to be due to the fact that you can only (rationally) wish that p if you are sure that $\neg\mathsf{p}$.[32] You're not sure how Bud's coin landed, so you can't be sure it landed heads or be sure that it landed something other than heads, so neither (19a) nor (19b) can be true if you are rational.

On the other hand, indeterminate fictional claims seem to be acceptable under 'hope':

(21) a. ✓I hope that Bud's coin landed heads.

[31] Williams & Woodward (2019, 6) say that the claim that Deckard is a replicant 'allow[s] for speculation and wonder'.

[32] See, for example, Heim 1992, von Fintel 1999, Blumberg 2018, 2023, and Grano & Phillips-Brown 2022. Note that this constraint on (rational) wishing is normally articulated in terms of "belief", though it's clear in context of these discussions that the constraint is meant to be interpreted as a kind of strong belief, akin to being sure.

b. ✓I hope that Sam Gamgee lived out the rest of his life in peace and prosperity.

What accounts for this contrast between 'hope' and 'wish'? Plausibly, it is explained by the fact that although wishing that p requires being sure that $\neg\mathsf{p}$, hoping that p requires being *unsure* whether p.[33] And, as suggested above, it's perfectly reasonable to be unsure whether an indeterminate fictional claim is true.

6.6 Summary

Our observations from this section are summarized in the following table:

Attitude	FICTION
Know	✗
Sure	✗
Think	✓
Doubt	✓
Credence	✓
Wonder	✓
Wish	✗
Hope	✓

Before turning these observations into an argument against the standard analysis, we want to briefly discuss a concern raised by a reviewer about the attitude ascriptions we have claimed to be felicitous (in other words, those that have received a '✓' in our chart).

The worry is based on the judgment that exchanges like the following are natural:

A: I think that Bud's (biased) coin landed heads/I wonder whether Bud's coin landed heads.

B: What do you mean? Didn't you know that this was the final episode of *JAG* and that the writers said in an interview that they have intentionally left it open what happens to the coin? There isn't a fact of the matter whether the coin landed heads!

[33]See the references given in note 32 as well as Benton 2019, 2021 and Blumberg & Hawthorne 2022 for further discussion of the doxastic constraints on hoping.

However, we are skeptical that such dialogues undermine the data we have canvassed in this section. We see two ways of interpreting B's reply: either (i) as expressing some kind of pre-theoretic intuition about the defectiveness of A's speech; or (ii) as expressing a theoretical argument for why A's seemingly acceptable speech is in fact problematic. Either way, we find little reason to think that B's reply undermines A's assertion.

Regarding (i), we are suspicious there is any pre-theoretic intuition B could be channeling here. This is chiefly because 'fact of the matter'—as B uses it—is a semi-technical notion rather than an ordinary one. What would be more concerning is if B were able to respond by saying something like:

(22) a. ✗ What do you mean you think Bud's (biased) coin landed heads? Given the way *JAG* ended, you should be certain that's not the case.

b. ✗ What do you mean you wonder whether Bud's coin landed heads? You know that it didn't!

But to our ears these speeches are robustly infelicitous, in addition to being difficult to square with the ubiquity of speculation and debate about the truth-value of various non-principal fictional claims.

Regarding (ii), we'd sooner reject one of the premises of B's argument than accept its conclusion. Perhaps there being "no fact of the matter" about whether p is perfectly compatible with one's rationally having opinions about p, wondering whether p, and so on; or perhaps—as we will argue in §8—we should simply reject the claim that there is "no fact of the matter" about how Bud's coin landed.[34] Either way, we find the judgment that rational agents can have opinions and wonder about indeterminate fictional claims to be on firmer footing than any theoretical premise that might be driving B's complaint.

With that, we now turn to leveraging the observations of this section into an argument against the standard analysis.

7 Against the standard analysis

7.1 The core problem

The standard analysis identifies fictional truth with principal fictional truth. Thus, Frege puzzles aside, the standard analysis implies that one's attitude Φ

[34] Khoo 2021 defends something closely related to the first line with respect to indeterminate counterfactuals (a topic we will take up in §9). Note that a similar dialectic also arises for future contingents—see Cariani 2021, Todd 2021, and Torre 2021.

toward the proposition that a fictional claim is true in f is nothing over and above one's attitude Φ toward the proposition that that claim is a principal truth of f. This is just to say that the standard analysis validates:

Attitude Equivalence S Φs $\neg\Box_f \mathsf{p}$ iff S Φs P-Fic$_f \not\subseteq \mathsf{p}$

But Attitude Equivalence mischaracterizes the data in two directions. First, it implies that a number of intuitively false attitude reports are in fact true; and second, it implies that a number of intuitively true attitude reports are in fact false.

Starting with the first sort of mischaracterization, consider again (10b):

(10b) ✗ I know whether Bud's coin landed heads.

On the modal approach, the logical form of the complement of (10b) is given by $\Box_{JAG}$Bud's coin landed heads. So (10b) is true if and only if you know whether $\Box_{JAG}$Bud's coin landed heads. For any p, you know whether p if and only if you know that p or you know that $\neg$p (Uegaki, 2015). Thus, (10b) is true if and only if you know that $\Box_{JAG}$Bud's coin landed heads or you know that $\neg\Box_{JAG}$Bud's coin landed heads. But given Attitude Equivalence, you *do* know that $\neg\Box_{JAG}$Bud's coin landed heads—in other words, that it's not true in *JAG* that Bud's coin landed heads. After all, you know that this claim is not among the principal truths. Thus, the standard analysis predicts (10b) is true, contrary to appearances.[35]

The problem quickly spreads. Anyone who is sure that it's not a principal truth of *JAG* that Bud's coin landed heads is sure that it's not true that Bud's coin landed heads. This implies that (11b) ('I'm not sure whether Bud's coin landed heads') is false, contrary to intuitive judgment. Likewise, since you know (and are sure) that it's not true that Bud's coin landed heads, you must doubt that it did, and there is no longer anything stopping you from wishing that it had. Thus, the standard analysis struggles to explain the infelicity of (14a) ('I doubt

[35] A reviewer floats the following reply on behalf of the standard analysis: $\Box_f$ takes wide-scope with respect to negation in 'know whether' clauses, so that S knows whether $\Box_f$p is true just in case either (i) S knows that $\Box_f$p is true or (ii) S knows that $\Box_f\neg$p is true. In that case, (10b) would be false (as it ought to be), since you know neither that $\Box_{JAG}$Bud's coin landed heads nor that $\Box_{JAG}\neg$Bud's coin landed heads. However, we have several worries about this response. To mention just one here: the dominant approach to 'whether' is that it is an expression that "lexicalizes negation". That is, negation forms part of the *semantic* contribution of 'whether', but is not overtly represented *syntactically* at LF, and therefore cannot be outscoped by operators such as $\Box_f$. In this respect it is helpful to compare 'whether' to other expressions that lexicalize negation, like (counterfactual) 'wish'. For instance, as mentioned in §6.5, it is widely assumed that S wishes p is true only if S believes $\neg$p. But neither the belief operator nor negation are taken to be explicitly represented in the LFs of wish reports (Heim 1992, von Fintel 1999, Blumberg 2018).

that Bud's coin landed heads') and (19a) ('I wish that Bud's coin had landed heads').

The standard analysis also predicts that various intuitively true attitude reports are false. For instance, I think (and indeed know) that it's not a principal truth of the version of *JAG* in which Bud's coin is biased 2:1 in favor of heads that Bud's biased coin landed heads. By Attitude Equivalence, it follows that I think that it's not true that Bud's biased coin landed heads. But then reports such as (13) ('I think that Bud's biased coin landed heads') cannot be true (at least assuming I don't believe blatant contradictions).

Similarly, Attitude Equivalence implies that one's credence that a fictional claim is true is identical to one's credence that that claim is among the principal truths of the relevant fiction. So anyone who assigns credence 1 to the claim that it's not a principal fictional truth of *JAG* that Bud's coin landed heads must assign credence 0 to the claim that Bud's coin landed heads. But this runs afoul of the intuitive judgments about (15a) ('It's .5 likely that Bud's coin landed heads'). *Mutatis mutandis* for the comparative likelihood judgments like (16).

Finally, assuming that a rational agent can only wonder or be curious about whether p when they aren't sure whether p, it follows immediately that rational agents cannot wonder or be curious about indeterminate fictional claims. When one knows that the principal truths fail to settle the matter, there's nothing left to wonder or be curious about.

We conclude that the standard analysis is in a bad way. The identification of fictional truth with principal fictional truth may seem reasonable enough when intuitions about fictional claims are considered in isolation. But when such claims are embedded under attitude verbs and probability operators, the predictions of the standard analysis become untenable. Knowing that a claim is not a principal fictional truth is one thing; knowing that it is not a fictional truth simpliciter is another.

7.2 Fictional indeterminacy as undefinedness?

Could some of these problems be solved if one maintained that fictionally indeterminate claims are not necessarily false, but are instead merely *undefined*?

The answer to this question depends on what exactly is entailed by a claim's being "undefined". Perhaps undefinedness is to be understood as a kind of presupposition failure, or as involving a third truth-value. We're happy to let proponents of the view fill in the details how they like. If it's to be an improvement on the standard analysis, the status of undefinedness needs to have the

right sorts of connections to judgments of infelicity. In particular, it needs to be that a claim's being known to be undefined makes its assertion infelicitous:

Assertability If S knows that p is undefined, then S should not assert p.

For without this connection, we'd lack any explanation of the infelicity of bare assertions of fictional claims that are known to be indeterminate, like (9a) and (9b).

Similarly, if a proponent of this view wants to explain why reports like (10b) ('I know whether Bud's coin landed heads') are infelicitous, it needs to be that undefinedness *projects* under attitude verbs:[36]

Attitude Projection If S knows that p is undefined, then $\mathsf{S\ \Phi s\ p}$ is undefined.

This is a familiar idea.[37] It is widely assumed that a sentence like 'The King of France is happy' is defined only if there exists a King of France. It is common knowledge that there is no such individual. So consider the following reports:

(23) a. ✗ I know whether the King of France is happy.
b. ✗ I'm sure that the King of France is happy.
c. ✗ I think that the King of France is happy.

These examples are robustly infelicitous, which is exactly what is predicted by the combination of Assertability and Attitude Projection.

Given these principles, those who maintain that fictionally indeterminate claims are undefined can respond to the overgeneration concerns raised above. For instance, $\Box_{JAG}$Bud's coin landed heads is known to be indeterminate and thus, by hypothesis, undefined. So, given Attitude Projection, I know whether $\Box_{JAG}$Bud's coin landed heads is undefined, and thus, given Assertability, (10b) is unassertable. Similar points go through for each of the other infelicitous examples.

However, the view still undergenerates. This is because a number of attitude reports that embed fictionally indeterminate claims are perfectly felicitous: for example, certain of the thinking and doubting reports, as well as reports about subjective probability, wonder, curiosity, and hope. Yet given Attitude Projection all such reports are undefined and so, by Assertability, unassertable.

[36] Note that one could have a view on which an attitude report with an undefined complement clause is *false* rather than undefined. However, such a view would be subject to exactly the kinds of worries we are about to raise for Attitude Projection as stated.

[37] See, for example, Heim 1983, 1992, Schlenker 2009, Sudo 2014, and Blumberg & Goldstein 2022.

To get around this problem, Attitude Projection must be revised to say that the known undefinedness of the complement entails undefinedness of the attitude report as a whole—but only for *certain* attitudes. For example: if p is undefined, then so is S knows whether p, but not S wonders whether p.

This strikes us as uncomfortably *ad hoc*. For note that with respect to more familiar kinds of undefinedness—say the (known) undefinedness of 'The King of France is happy'—there is no such variation in how these claims embed under attitude verbs. All such embeddings are equally infelicitous:

(24) a. ✗ I doubt that the King of France is happy.
b. ✗ There is some chance that the King of France is happy.
c. ✗ I wonder whether The King of France is happy.
d. ✗ I'm curious about whether The King of France is happy.

So why should the projection properties of undefined fictional claims pattern so differently?

Lastly, we note that there is a general challenge for any theory of fictional truth that is (a) designed to deliver the relevant patterns in the attitude judgments surveyed above, while (b) being committed to a trivalent conception of undefinedness:

Trivalence If p is undefined, then p is neither true nor false.

The challenge is that any such view must predict that abominable conjunctions of the following form can in fact be uttered truly:

(25) a. ✗ I know whether p is true, but I don't know whether p.
b. ✗ I wonder whether p, but I don't wonder whether p is true.

After all, if I know that p is fictionally indeterminate, then I know whether p is true (it isn't), and I can't wonder whether p is true (because I know it's not). But as we've seen, the attitude data suggest that all this is no barrier to my not knowing whether p, or to my wondering whether p. So both (25a) and (25b) would have to have true instances. It is hard to see how this could be so.

In light of these considerations, we think that our observations involving attitudes count strongly against the standard analysis—whether it treats fictionally indeterminate claims as false or as undefined.

8 A positive account

8.1 Scopelessness

The lesson of the failures of the standard analysis is that the correct account of fictional truth will block the inference from P-Fic$_f$ $\not\subseteq$ p to $\neg\Box_f\mathsf{p}$. Accordingly, there must be fewer worlds compatible with what's true in a work of fiction than there are compatible with the principal truths of that work. This means that Fic$_f$ is not just a subset of P-Fic$_f$, but a *strict* subset of it.

In fact, we can place even stronger constraints on Fic$_f$. To help motivate them, consider an example such as (26):

(26) ✗ I know that Bud's coin failed to land heads.

Plausibly, the only available logical form for this sentence is equivalent to one where negation takes narrow scope with respect to $\Box_{JAG}$ (we use parentheses to aid readability):[38]

(27) I know that: $\Box_{JAG}\neg$(Bud's coin landed heads)

But this raises a puzzle, for the following argument appears to be valid:

(28) I don't know that Bud's coin landed heads. And I don't know that it failed to land heads. So I don't know whether Bud's coin landed heads.

This inference strike us as unimpeachable. However, you don't know whether $\Box_{JAG}$Bud's coin landed heads if and only if you neither know that $\Box_{JAG}$Bud's coin landed heads nor know that $\neg\Box_{JAG}$Bud's coin landed heads. But all the premises establish is that you fail to know that $\Box_{JAG}$Bud's coin landed heads and that you fail to know that $\Box_{JAG}\neg$Bud's coin landed heads. What this means is that failing to know $\Box_{JAG}\neg$Bud's coin landed heads must suffice for failing to know $\neg\Box_{JAG}$Bud's coin landed heads. Thus, (27) must be implied by (29):

(29) I know that: $\neg\Box_{JAG}$Bud's coin landed heads

[38] The verb 'fail to X' lexicalizes negation in the sense that it is semantically equivalent to 'not X' (in the contexts of interest), but syntactically does not feature an element with the force of negation. Thus, although 'Bud's coin failed to land heads' is semantically equivalent to 'Bud's coin did not land heads', the former is not syntactically equivalent to the latter, since the former does not feature a scope-taking negation operator. This means that (26) can only be represented by a logical form where negation takes narrow-scope with respect to $\Box_{JAG}$ (as well as the knowledge operator).

In fact, (27) and (29) must be equivalent. For so long as Fic_{JAG} is non-empty, it follows from the modal analysis itself that (27) implies (29): if you know that every world in Fic_{JAG} is a $\neg$p-world, then you know that it's not true that every world in Fic_{JAG} is a p-world.

These points suggest that the correct analysis of $\Box_f$ will validate the following:

Scopeless Inference S Φs $\neg\Box_f$p iff S Φs $\Box_f\neg$p

Which is in turn tantamount to requiring that $\Box_f$ commutes with negation:

Scopelessness $\neg\Box_f$p iff $\Box_f\neg$p

We will now argue that Scopelessness is the key to explaining the patterns from §6.

8.2 Explaining the data

For now let us continue to assume that if $\Box_f$p is fictionally indeterminate, then one can neither know that $\Box_f$p nor know that $\Box_f\neg$p. (We'll give an argument for this assumption in §§9–10.) Given this assumption, it follows that you can't know that $\Box_{JAG}$Bud's coin landed heads or that $\Box_{JAG}\neg$Bud's coin landed heads. So (10a) ('I know that Bud's coin landed heads') is false. (10b) ('I know whether Bud's coin landed heads') is true if and only if either (i) you know that $\Box_{JAG}$Bud's coin landed heads—which we just saw is not the case—or (ii) you know that $\neg\Box_{JAG}$Bud's coin landed heads. Given Scopelessness, (ii) holds if and only if you know that $\Box_{JAG}\neg$Bud's coin landed heads. But (26) is false, so (ii) does not hold either. So (10b) must be false, as desired.

To account for the surety reports, we'll once again invoke our earlier principle: if you know that you don't know whether a certain claim is true, then, if you are rational, you are not sure whether that claim is true. We just gave an argument for why you don't know whether Bud's coin landed heads. But notice that the reasoning there is entirely transparent: anyone who knows that it's fictionally indeterminate how Bud's coin landed can easily know that they don't know whether Bud's coin landed heads, by reasoning roughly in the way we just did. So (10b) isn't just false, it's knowably false. So (11b) ('I'm not sure whether Bud's coin landed heads') must be true. And this in combination with Scopelessness entails that both (11a) ('I'm sure that Bud's coin landed heads') and (30) are false:

(30) ✗ I'm sure that Bud's coin didn't land heads.

Given that you neither know nor are sure whether Bud's coin landed heads, there is no barrier to you wondering or being curious about whether Bud's coin landed heads, or to hoping that Bud's coin landed heads. This accounts for inquisitive reports like (17) and (18), as well as hope reports like (21a). Likewise, it also explains the infelicity of wish reports like (19): if you wish that Bud's coin had landed heads, then you must be sure that it's not true that Bud's coin landed heads. You're not sure of this, so you can't wish it had been otherwise.

Accounting for the weak doxastic attitude and subjective probability reports requires our second assumption (or really set of assumptions), which is about how credences are modeled. None of these ideas are particularly controversial, but still we think it's worth stating them explicitly.

We assume that an agent's state of surety can be represented by a set Dox_S, understood as the set of worlds compatible with what S is sure of.[39] S is sure that p iff $\forall w' \in \text{Dox}_S$: p is true at w' (Hintikka, 1962). We assume that an agent's credences can be represented by a subjective probability function, C_S.[40] We also assume that C_S is uniform over Dox_S. Thus, if every world in Dox_S is a p-world (in other words, S is sure that p), then S's credence that p is 1; if exactly half the worlds in Dox_S are p-worlds, then S's credence that p is .5; if S finds it more likely that p than that q, then there are more p-worlds in Dox_S than q-worlds; and so on.

Given these assumptions, (15a) ('It's .5 likely that Bud's coin landed heads') is true just in case exactly half the worlds in Dox_S are worlds in which $\Box_{JAG}$Bud's coin landed heads is true, while (15b) ('It's twice as likely that Bud's biased coin landed heads as it is that it landed tails') is true just in case there are twice as many worlds in Dox_S in which $\Box_{JAG}$Bud's biased coin landed heads is true as there are worlds in which $\Box_{JAG}$Bud's biased coin landed tails is true. We don't have a direct argument for the conclusion that Dox_S *must* have this structure. But if you are rational, then plausibly you will be doxastically indifferent to the various possibilities compatible with the principal truths of *JAG*. And such indifference should provide Dox_S with the relevant structure to witness the truth of (15a) and (15b).

Finally, the explanation of the thinking and doubting reports falls out of the explanation of the rest of the data. If you are rational and you find p more likely than not, then you can think that p; else you cannot. You find it exactly as likely that Bud's coin landed heads as that it didn't, so (12) ('I think that

[39] Strictly speaking, Dox_S should be parametrized to a world. We leave this implicit in what follows.

[40] C_S is a function from $\mathcal{A}$, an algebra of subsets of W, to the unit interval. $C_S(\text{Dox}_S) = 1$; and for disjoint $\mathsf{p}, \mathsf{q} \in \mathcal{A}$, $C_S(\mathsf{p} \cup \mathsf{q}) = C_S(\mathsf{p}) + C_S(\mathsf{q})$.

Bud's coin landed heads') is false. But you do find it more likely than not that Bud's biased coin landed heads, so (13) ('I think that Bud's biased coin landed heads) is true. And doubting that p is just thinking that $\neg\mathsf{p}$, hence why (14a) ('I doubt that Bud's coin landed heads') is false while (14b) ('I doubt that Bud's biased coin landed tails') is true.

We have shown how Scopelessness in combination with some other fairly uncontroversial assumptions about the workings of the attitudes allows us to capture the full range of patterns in the attitude data surveyed above. We take this to constitute strong abductive evidence in favor of theories of $\Box_f$ that validate Scopelessness, and against those like the standard analysis that invalidate it. We now want to turn to exploring some of the logical implications of Scopelessness, chief among them what we will call the principle of "fictional excluded middle" (FEM).

8.3 The logic of fiction

Given that $\Box_f$ quantifies universally over the worlds in Fic_f, Scopelessness imposes strong constraints on the cardinality of Fic_f. In fact, it entails that it is a singleton:[41]

Uniqueness $|\mathrm{Fic}_f| = 1$

It also entails:[42]

FEM $\Box_f\mathsf{p} \vee \Box_f\neg\mathsf{p}$

From FEM it follows that exactly one of (9a) ('Bud's coin landed heads') or (9b) ('Bud's coin landed tails') is true. So too for the claims about Holmes's head: either (1a) is true and he has an odd number of hairs on his head, or (1b) is true and he has an even number. Indeed, there is an exact list of all the books Ignatius Reilly has tried to read in his life; it's an open question whether *The Critique of Pure Reason* is on it. Perhaps Hamlet wasn't born on a Tuesday; but if so, then it's true that he was born on a different day of the week. There is some precise number of years Elizabeth Bennett lives to be—hopefully it's at least in the 70s. And the full extent of Raskolnikov's dermatological maladies may never be known, but the facts are nonetheless out

[41] Suppose Fic_f contained at least two worlds w_1 and w_2. Since these worlds are distinct, there would have to be some p such that p is true at w_1, and $\neg\mathsf{p}$ is true at w_2. But then we'd have (i) that $\neg\Box\mathsf{p}$ is true, since not every world in Fic_f is a p-world; but also (ii) that $\neg\Box\neg\mathsf{p}$ is true, since not every world in Fic_f is a $\neg\mathsf{p}$-world either. From there, one application of double negation elimination yields a violation of Scopelessness.

[42] The left-to-right direction of Scopelessness yields $\neg\Box_f\mathsf{p} \rightarrow \Box_f\neg\mathsf{p}$, which is equivalent to $\neg\neg\Box_f\mathsf{p} \vee \Box_f\neg\mathsf{p}$ and thus FEM given double negation elimination.

there. Fictional indeterminacy is no barrier to truth. This is because for any given work of fiction, there is a single world that determines what's true in it, and that world is as rich in detail as reality itself.

We suspect that some will find the picture of fictional truth we have argued for difficult to accept. Indeed, we acknowledge that our account raises many questions that need to be addressed. In the remaining sections of the paper, we focus on those we deem most urgent. We begin with two in particular. First, what could possibly determine which world gets to be *the* world of a fiction? And second, we've been assuming from the outset that fictionally indeterminate claims are unknowable—but why should this be? We will now argue that the answers to both of these questions plausibly have something to do with counterfactuals.

9 Counterfactual indeterminacy

Suppose Flippy is a fair coin that existed briefly in the year 2010 but was never flipped. Now consider the following counterfactual conditionals:

(31) a. If Flippy had been flipped once, it would have landed heads.
b. If Flippy had been flipped once, it would have landed tails.

It's hard to see which facts about the physical world could explain why one rather than the other of these claims is true. As such, the question of how Flippy would have landed had it been flipped seems to admit no determinately true answer. In this sense (31a) and (31b) are *counterfactually indeterminate*.[43]

It seems obvious that one cannot know that an indeterminate counterfactual expresses a truth. But how do indeterminate counterfactuals pattern with attitudes more generally?

9.1 Attitudes towards indeterminate counterfactuals

The relevant judgments, stated in one fell swoop, are as follows:

(32) Knowledge
a. ✗ I know that Flippy would have landed heads, had it been flipped once.

[43] For further discussion and more examples of indeterminate counterfactuals, see, for example, Lewis 1973a, Stalnaker 1980, Schulz 2014, 2017, Khoo 2021, and Goodman manuscript.

b. ✗ I know whether Flippy would have landed heads, had it been flipped once.

(33) Being sure

a. ✗ I'm sure that Flippy would have landed heads, had it been flipped once.

b. ✗ I'm sure that Flippy wouldn't have landed heads, had it been flipped once.

c. ✓ I'm not sure whether Flippy would have landed heads, had it been flipped once.

(34) Thinking

a. ✗ I think that if Flippy had been flipped once, it would have landed heads.

b. ✓ I think that if a version of Flippy that was biased 2:1 in favor of heads had been flipped once, it would have landed heads.

(35) Doubt

a. ✗ I doubt that if Flippy had been flipped once, it would have landed heads.

b. ✓ I doubt that if a version of Flippy that was biased 2:1 in favor of heads had been flipped once, it would have landed tails.

(36) Credence[44]

a. ✓ It's .5 likely that Flippy would have landed heads, had it been flipped once.

b. ✓ It's twice as likely that biased Flippy would have landed heads as it is that it would have landed tails, had it been flipped once.

(37) Inquisitives[45]

a. ✓ I wonder whether Flippy would have landed heads, had it been flipped once.

b. ✓ I'm curious about whether Flippy would have landed heads, had it been flipped once.

(38) Wishing

[44] Judgments about credences in indeterminate counterfactuals has been discussed extensively in the literature. See, for example, Moss 2013, Schulz 2014, 2017, and Mandelkern 2018.

[45] Moss (2013) notes that wonder reports felicitously embed indeterminate conditionals.

a. ✗ I wish that Flippy wouldn't have landed heads, had it been flipped once.

b. ✗ I wish that Flippy would have landed something other than heads, had it been flipped once.

(39) Hope

a. ✓ I hope that Flippy would have landed heads, had it been flipped once.

b. ✓ I hope that Flippy would have landed something other than heads, had it been flipped once.

The parallels between the two sets of attitude data is striking. Combining these observations with those from §6, we get the following table:

Attitude	FICTION	CONDITIONALS
Know	✗	✗
Sure	✗	✗
Think	✓	✓
Doubt	✓	✓
Credence	✓	✓
Wonder	✓	✓
Wish	✗	✗
Hope	✓	✓

9.2 Selection function semantics

It appears that counterfactually indeterminate claims embed under attitudes in essentially the same way fictionally indeterminate claims do.[46] This is significant, since theorists working on the semantics of counterfactuals (and conditionals more generally) have tried to develop theories that explain these sorts of embedding patterns.[47] By far the most popular approach for theorists driven by such concerns involves a *selection function* semantics for the conditional.

[46] Future contingents comprise another category of claims worth comparing to indeterminate fictional claims and indeterminate counterfactuals. Although we do not have the space to do this here, we refer readers to Torre 2021 for evidence that future contingents are rational objects of curiosity and wonder, as well as a discussion of the theoretical significance of these observations.

[47] In fact, theorists working on conditionals tend only to focus on the way indeterminate conditionals embed under credence and likelihood judgments. Far less attention has been paid to the way fictional content embeds under attitudes in general.

There are several ways of developing a selection function semantics.[48] We will present a fairly simple account inspired by Stalnaker 1968 in order to get the main ideas across.

Letting '>' abbreviate the counterfactual conditional, the basic idea is that $\mathsf{p} > \mathsf{q}$ is true just in case every member of a set of p-worlds is a q-world. This set of p-worlds is in turn determined by a selection function $\mathfrak{s}$. This function takes a proposition and a world as arguments, and yields a set of worlds as output. The semantics can be represented as follows:

> **Selection Function Analysis for Counterfactuals**
>
> $\mathsf{p} > \mathsf{q}$ is true at w iff: $\forall w' \in \mathfrak{s}(\mathsf{p}, w)$: q is true at w'.

There are a number of standard assumptions about the workings of the selection function $\mathfrak{s}$ that theorists tend to adopt.[49] But what is distinctive about the Stalnakerian approach is the assumption that $\mathfrak{s}(p, w)$ contains exactly one world:

C-Uniqueness $|\mathfrak{s}(\mathsf{p}, w)| = 1$

Just as Uniqueness entails the validity of FEM, C-Uniqueness entails the validity of the principle known as "Conditional Excluded Middle" (CEM):[50]

CEM $(\mathsf{p} > \mathsf{q}) \vee (\mathsf{p} > \neg\mathsf{q})$

CEM implies that one of (31a) ('If Flippy had been flipped once, then it would have landed heads') or (31b) ('If Flippy had been flipped once, then it would have landed tails') is true.[51] Thus, the selection semantics predicts that counterfactual indeterminacy is no barrier to counterfactual truth.

Notably, this theory also validates:

C-Scopelessness $\neg(\mathsf{p} > \mathsf{q})$ iff $(\mathsf{p} > \neg\mathsf{q})$

And given (i) C-Scopelessness and (ii) the assumption that if $\mathsf{p} > \mathsf{q}$ is counterfactually indeterminate, then one can neither know that $\mathsf{p} > \mathsf{q}$ nor know that

[48] See, for example, Stalnaker 1968, 1980, Schulz 2014, 2017, Bacon 2015, Mandelkern 2018, Santorio 2022, and Schultheis 2023.

[49] For example, it is standardly assumed that $\mathfrak{s}(\mathsf{p}, w) \subseteq \mathsf{p}$ (in other words, that the p-selected set contains only p-worlds). This helps guarantee the validity of $\mathsf{p} > \mathsf{p}$. Likewise, it is standardly assumed that if $w \in \mathsf{p}$, then $\mathfrak{s}(\mathsf{p}, w) = \{w\}$ (in other words, that if the world at which the counterfactual is assessed is one that makes the antecedent true, then the selected world is the world of assessment itself). This helps secure the validity of inference rules like modus ponens. See Starr 2022 for a discussion of the various constraints one can impose on selection functions, and how this impacts the logic of conditionals.

[50] For further discussion of the motivations for CEM, see, for example, Stalnaker 1980, Williams 2010, Cariani & Goldstein 2018, and Mandelkern 2018.

[51] Here we assume that the only way for Flippy to fail to land heads is for it to land tails.

$p > \neg q$, it follows that the patterns surveyed above can be captured in a way that is perfectly analogous to the account we gave of the patterns involving fiction from §6.

Finally, it is worth observing that the connections between fiction and conditionals appear to extend beyond patterns in attitude reports. To give one example, Higginbotham (1986, 2003) notes the intuitive equivalence of quantified conditionals such as (40a) and (40b):

(40) a. Every student would have failed, if he had goofed off.
b. No student would have passed, if he had goofed off.

A number of theorists have taken this to constitute strong evidence for CEM.[52] This is because, plausibly, the logical forms of (40a) and (40b) are respectively given by (41a) and (41b) (in this context, we assume that 'fail' and 'not pass' are semantically equivalent):

(41) a. Every student x: if x had goofed off, ¬(x would have passed)
b. Every student x: ¬(if x had goofed off, x would have passed)

Given CEM, (41a) and (41b) are semantically equivalent, which would explain the felt equivalence of (40a) and (40b). Without CEM, it's unclear how this is to be explained.

Interestingly, there appear to be analogues of Higginbotham sentences in the domain of fiction. For instance, consider quantified fictional claims that "mix" the external and the internal, like (42a) and (42b):[53]

(42) a. Every character in *The Breakfast Club* failed the test.
b. No character in *The Breakfast Club* passed the test.

These are intuitively equivalent. Plausibly their logical forms are as follows:

(43) a. Every character in The Breakfast Club x: $\Box_{BC}\neg$(x passed)
b. Every character in The Breakfast Club x: $\neg(\Box_{BC}$x passed)

[52] See, for example, Williams 2010, Cariani & Goldstein 2018, and Mandelkern 2018.

[53] That these claims mix the external and the internal is due to the fact that (i) it's not (externally) true that every character in *The Breakfast Club* failed the test, since only flesh-and-blood people have actually failed any tests; and (ii) it's not (internally) true that in *The Breakfast Club*, every character in *The Breakfast Club* failed the test, since, among other things, in *The Breakfast Club* there's no such thing as the work of fiction *The Breakfast Club*. The relevant logical forms of these mixed statements are given in (43).

If FEM is valid, then (43a) and (43b) are semantically equivalent, explaining the felt equivalence of (42a) and (42b). If FEM is invalid, then it's unclear how this is to be explained.[54]

9.3 Fictional truth as counterfactual truth

The similarities between FEM and CEM set us up to answer the first question we asked at the end of the previous section: of all the worlds compatible with the principal truths of a given work of fiction, why does exactly one of them get to be *the* world of that fiction?

We suggest that an answer can be given in terms of what we will call the *Principal Reality Principle*:

The Principal Reality Principle $\Box_{f,w}\mathsf{p}$ iff $(\text{P-Fic}_{f,w} > \mathsf{p})$

What the Principal Reality Principle says, in words, is that a claim is a fictional truth of f iff the following counterfactual is true: if all the principal truths of f were externally true—in other words, true in reality, not just in f—then that claim would be externally true too. According to the Principal Reality Principle, fictional truth is a kind of counterfactual truth.[55]

We lack the space to argue for the Principal Reality Principle in detail here. But the striking similarities in the attitude data for fictional and counterfactual indeterminacy provide strong abductive support for the hypothesis that fictional

[54] Thanks to a reviewer for suggesting that we consider further connections between the motivations for FEM, on the one hand, and the motivations for CEM, on the other; and thanks to Harvey Lederman for pointing us towards Higginbotham's data in particular.

[55] The Principal Reality Principle is inspired by a related, but distinct, thesis called "The Reality Principle". Variants of the Reality Principle were initially proposed and tentatively defended by Lewis (1978) and Walton (1990). For instance, Walton's version of the Reality Principle is essentially as follows (145):

> If p_1, ... , p_n are the explicit fictional truths of a fiction f, it is true in f that q iff the following holds: were p_1, ... , p_n the case, q would have been the case.

The Reality Principle is quite controversial—for criticisms, see, for example, Currie 1990, Phillips 1999, Proudfoot 2006, Woodward 2011b, Friend 2017, and Badura & Berto 2019; but see also Franzén 2021 for a recent defense of the principle. A number of objections that have been raised against the Reality Principle are avoided by the Principal Reality Principle, in virtue of the latter's use of the more flexible notion of principal truth in place of explicit fictional truth. For instance, it's unclear whether Walton's Reality Principle can accommodate the implicit fictional truths that flow from an author's beliefs/intentions. By contrast, the Principal Reality Principle is hard-wired to generate them. Granted, one could construct variants of the Reality Principle whose antecedents entail something stronger than the conjunction of all the relevant fiction's explicit truths—see Lewis 1978 and Franzén 2021 for examples. However, we suspect that, in the limit, such modifications will result in a principle that is intensionally equivalent to the Principal Reality Principle. Finally, we note that if one used a variably strict conditional in the style of Lewis 1973b in interpreting a (suitably cleaned up version of) the Reality Principle, then the resulting principle would serve as a plausible theory of *principal* fictional truth.

truth is a species of counterfactual truth. Indeed, we see no better way of explaining these similarities.[56]

What's of primary interest to us is the way The Principal Reality Principle interacts with a selection function semantics for the counterfactual, on the one hand, and our analysis of fictional truth, on the other. For notice that the Principal Reality Principle says that a fictional claim is true if and only if a certain counterfactual is true. The selection function semantics tells us that a certain counterfactual is true if and only if the *unique* world selected by the selection function is a world in which that counterfactual's consequent is true. So, on the assumption of The Principal Reality Principle and the selection function semantics, one can explain why for some particular world w, $\text{Fic}_f = \{w\}$. That is because w is the selected world—the unique world that would accurately represent how things are, were all the principal claims of f really true.[57]

10 Arbitrariness and vagueness

Is this an entirely satisfying explanation? We suspect some will think not. Some might argue that all we have done is reduce one kind of indeterminacy to another. We claim that for any given work of fiction, there's a unique world compatible with everything that's true in that fiction—namely the world that would be the real one were the principal fictional claims an accurate description of reality. But this explanation involves appealing to an indeterminate counterfactual. Consequently, some may wonder why a particular world gets to be

[56] Interestingly, Stalnaker (1980, 95) explicitly draws a parallel between his selection function semantics for conditionals and truth in fiction:

> It is not surprising, from the point of view of the analysis I am defending, that the possible situations determined by the antecedents of counterfactual conditionals are like the imaginary worlds created by writers of fiction. In both cases, one purports to represent and describe a unique determinate possible world, even though one never really succeeds in doing so.

[57] Our claims here make contact with some arguments of Woodward (2011a), who suggests that fictional*isms* of various stripes—say about mathematics, composite objects, or modality (see Rosen & Dorr 2002)—can be made semantically complete by appealing to the deliverances of a CEM-validating counterfactual conditional in conjunction with a Walton/Lewis-style Reality Principle. However, there are also some important differences between our accounts. For one, it's unclear what the relationship between FEM and the analogous excluded middle principle for fictionalisms is supposed to be. For another, Woodward suggests that indeterminate conditionals are semantically undecided (see his §3), but we argue against this view at some length in §10. Finally, our arguments for FEM and for the connection between conditionals and fiction are primarily driven by judgments about embedding patterns, rather than a prior commitment to CEM (or to our Principal Reality Principle). Still, we believe that many of the conclusions we have defended in this section are in keeping with the general morals of Woodward's paper.

selected by the selection function, rather than one of the many other worlds compatible with the principal fictional truths.

Sometimes facts about intuitive similarity between worlds will be of some help in fleshing out the story: if one of two antecedent worlds is sufficiently more similar to the world of assessment than the other, then we should expect the selection function to select that world if it's selecting either (Stalnaker 1968, 1980). However, so long as 'similarity' is meant to to be understood independently of the workings of the selection function, it's unclear that this kind of explanation can work in the general case. There seems to be no intuitive sense in which worlds where Flippy lands heads after being flipped are more similar to actuality than worlds in which Flippy lands tails after being flipped, or in which worlds where Holmes has an even number of hairs on his head are more similar to actuality than worlds in which he has an odd number.[58]

In light of this, one might conclude that the workings of the selection function are fundamentally *arbitrary*, at least modulo large gaps in similarity: when choosing between two sufficiently similar worlds compatible with the antecedent of a given counterfactual, the selection function selects one at random, so to speak.[59] Supposing this is right, we have a straightforward answer to the question of why fictionally indeterminate claims are beyond our epistemic reach. If p is not a principal fictional truth of f, then whether p is true in f is determined by an arbitrary selection process. Unless one has "direct" evidence as to the result of this process—the word of an oracle, say—one's evidence won't be able to rule out any of the possible results. Thus, it is not possible to know whether p is true in f.

There are many who find this conception of the workings of counterfactuals intolerably counterintuitive. We admit it takes some getting used to. But the striking patterns in attitude data suggest that it is well worth taking seriously as a hypothesis about how the counterfactual conditional (and thus fiction) functions.

In any case, some proponents of the selection function semantics have tried to appeal to vagueness to help soften the blow. They claim that there are many selection functions compatible with our ordinary use of counterfactuals—with each such function selecting its own arbitrary world—and that in any given

[58] Nor does it seem intuitively correct to describe it as a *vague* matter which of these possibilities is more similar to actuality. If anything, it seems to be determinately the case that these possibilities are equally similar. We discuss the relationship between vagueness, on the one hand, and conditional and fictional indeterminacy, on the other, in greater detail below.

[59] Views of this sort have been defended by Hawthorne (2005), Schulz (2014, 2017), and Bacon (2015). See especially Bacon's discussion of his deflationary notion of "random" selection (146) and Schulz's discussion of the "epsilon operator" (2017, ch. 6).

context it will generally be a vague matter which of these selection functions is operative. By extension, indeterminate counterfactuals are vague (Stalnaker, 1980, 89-90), and so too are indeterminate fictional claims, given the Principal Reality Principle.

There are choice points as to how to develop a theory of vagueness. But regardless of the precise shape of this response, we argue that it should not be taken up by proponents of FEM. This is because the indeterminacy generated by canonically vague sentences patterns quite differently from counterfactual and fictional indeterminacy.

First, indeterminacy due to vagueness embeds differently under attitudes. To see this, suppose that there is a long sequence of people such that the first person in the series is clearly bald, while the last person is clearly not bald. Also suppose that adjacent members in the sequence differ by exactly one strand of hair, and that George is some middle-ish member of the sequence. Then (44) is vague (and thereby indeterminate):

(44) George is bald.

Now, as has been widely observed, vague sentences are uniformly unacceptable under propositional attitudes:[60]

(45)
a. ✗ I know whether George is bald.
b. ✗ I'm sure that George is bald.
c. ✗ I think that George is bald.
d. ✗ I doubt that George is bald.
e. ✗ I find it $.x$ likely that George is bald.
f. ✗ I wonder whether George is bald.
g. i. ✗ I wish that George was bald.
   ii. ✗ I wish that George wasn't bald.
h. ✗ I hope that George is bald.

These data contrast quite strikingly with our observations from §6 and §9.1:

[60] It is widely accepted that vague sentences are unacceptable under epistemics and doxastics, and Field (2010) notes that vague content also does not felicitously embed under 'wonder'. But these judgments are not without controversy: Bacon (2018), for example, argues that credence and comparative confidence judgments in vague claims are perfectly acceptable, while Spencer (2022), building on some ideas of Schoenfield (2016), argues that certain vague sentences embed felicitously under bouletics like 'hope'. We demur, but we lack the space to engage with these arguments here.

Attitude	Fiction	Conditionals	Vagueness
Know	✗	✗	✗
Sure	✗	✗	✗
Think	✓	✓	✗
Doubt	✓	✓	✗
Credence	✓	✓	✗
Wonder	✓	✓	✗
Wish	✗	✗	✗
Hope	✓	✓	✗

Thus, attempts to assimilate fictional and counterfactual indeterminacy with vague indeterminacy fail to capture the distinctive way in which fictional and counterfactual claims embed under attitudes.

Second, many philosophers maintain that vague indeterminacy arises due to some kind of semantic indecision. One piece of evidence for this comes from the ways in which one can respond to questions about vague matters:

(46) [You don't know anything about the state of George's scalp, but I know that he is borderline bald.]

a. You: Is George bald?

i. ✓ Me: Yes and no.

ii. ✓ Me: In some sense yes, in some sense no.

But as Jeremy Goodman has pointed out to us (in conversation), one cannot give analogous answers to questions about indeterminate conditionals:

(47) [You know that Flippy wasn't flipped, but you don't anything about the weighting of the coin. I know that Flippy is fair.]

a. You: If Flippy had been flipped, would it have landed heads?

i. ✗ Me: Yes and no.

ii. ✗ Me: In some sense yes, in some sense no.

Mutatis mutandis for indeterminate fictional claims. These sorts of replies are utterly bizarre when given as answers to the question 'Does Holmes has an even number of hairs on his head?'.

These points suggest that the kind of indeterminacy involved with vagueness is quite different from the kind of indeterminacy involved with counterfactuals and fictional claims. The former appears to have something to do with semantic indecision; the latter does not. Consequently, we are inclined to reject an account

of conditional indeterminacy—and by extension an account of fictional indeterminacy—that assimilates it to the kind of semantic indeterminacy involved in paradigm cases of vagueness. We believe an appeal to vagueness is no remedy to the seemingly ineliminable arbitrariness involved in determining which world in P-Fic$_f$ gets to be the unique world of f.

If fictional indeterminacy is not the result of semantic indecision, then what kind of indeterminacy is involved with it? One might conclude that fictional indeterminacy must be a kind of *metaphysical* indeterminacy—indeterminacy in the world itself, rather than indeterminacy in the way in which the world is represented.[61] This reaction is especially natural for those who think that there ought to be an account of where the seemingly in-principle barriers to knowing indeterminate fictional claims come from, given that no such explanation in terms of semantic indecision is available. Alternatively, one might be happy to understand fictional indeterminacy as a kind of (*sui generis*) *epistemic* indeterminacy, with the in-principle barriers to knowing fictionally indeterminate matters being constitutive of the phenomenon itself, and not in need of deeper explanation.[62]

Although the question of how to categorize fictional indeterminacy is pressing, we are reticent to take a stand on it here. For as far as we can tell, its resolution is mostly orthogonal to our main line of inquiry in this paper, which is to explore the logic and semantics of fictional claims. We see no reason to think that uniformity in the category of indeterminacy guarantees uniformity in the underlying logic: perhaps some but not all types of metaphysical indeterminacy validate the relevant "excluded middle" principles. Nor do we see any reason to think that uniformity in the underlying logic guarantees uniformity in the category of indeterminacy: perhaps a certain type of epistemic indeterminacy and a certain type of metaphysical indeterminacy happen to validate essentially the same set of logical principles (Barnes & Williams, 2011). The questions that motivate our discussion involve the embedding behavior of fictional claims, and we find it plausible that these can be studied largely from a position of neutrality on the complex issues concerning the nature of the indeterminacy at play. This is not to say that the best theory of the embedding behavior cannot

[61] For an influential treatment of the topic of metaphysical indeterminacy, see Barnes & Williams 2011, and for subsequent discussion, see, for example, Eklund 2011, 2013, Wilson 2013, Barnes 2014, Bacon 2018, Eva 2018, Calosi & Wilson 2019, Cariani 2021, ch. 11, and Darby & Pickup 2021.

[62] We take this three-way categorisation of indeterminacy into semantic, metaphysical and epistemic varieties from Barnes & Williams (2011). It is worth noting that although both Bacon (2015) and Schulz (2014, 2017) endorse an arbitrary selection semantics for conditionals, they do not appear to take a stand on the ultimate basis for selection—for example whether a metaphysical or epistemic account of this process is more appropriate. See also Woodward 2011a, 789.

have implications for these questions—indeed, we've argued against semantic accounts of fictional indeterminacy on essentially these grounds. But going further on such matters is a task for another occasion.

11 Further objections

We imagine some readers will be inclined to reject the premises that have led us to our theory of fictional truth sooner than they would embrace such surprising sounding claims as FEM. Those who feel the pull of this reaction are invited to see the argument of the paper as fundamentally conditional in nature: *if* we are not systematically mistaken in our judgments about the kinds of attitudes that are appropriate to take toward indeterminate fictional claims, *then* there must be facts of the matter about any meaningful question one can ask about what's true in a work of fiction—facts whose grounds will in many cases be almost entirely arbitrary. We would sooner accept the consequent of this conditional than deny the antecedent. But we leave a full defense of our methodological stance for another time.

What we want to do in the remaining parts of the paper is discuss objections to our account of fictional truth that are *not* premised on concerns of arbitrariness and the like. We will consider three: an objection from putatively impossible fictions, an objection from putatively incomplete fictions, and an objection concerning fictional change. These objections arguably arise for any theory of fictional truth in the spirit of the modal analysis, but we believe it is illuminating to consider their application to our account in particular.

11.1 Inconsistent fictions

The first objection concerns the possibility of *inconsistent fictions*—cases where for some work of fiction f, both $\Box_f \mathsf{p}$ and $\Box_f \neg \mathsf{p}$ are true.

Here's the problem in schematic form. Our theory of fictional truth says that $\Box_f \mathsf{p}$ is true if and only if $\forall w' \in \mathrm{Fic}_f$: p is true at w'. We assume that for any world w, at most one of p or $\neg \mathsf{p}$ is true at w. It follows immediately that if both $\Box_f \mathsf{p}$ and $\Box_f \neg \mathsf{p}$ are true, then Fic_f is the empty set. But if Fic_f is the empty set, then it follows trivially that no matter what p is, $\Box_f \mathsf{p}$ is true. Our account thus predicts that an inconsistent fiction is a fiction in which every claim is true. By extension, as far as fictional truth is concerned, there is no distinguishing inconsistent works of fiction.

This prediction looks problematic if one believes in the possibility of works of fiction that are merely "locally" inconsistent. For example, a crucial plot point of Priest's (1997) 'Sylvan's Box' is the discovery of a box that is described (putatively without equivocation) as being simultaneously empty and non-empty. Given that the box is so-described, it's plausible not only that $\Box_{SB}$The Box is empty and $\Box_{SB}\neg$The box is empty are both true, but that these claims report *principal* fictional truths. Nonetheless, Priest insists that 'Sylvan's Box' is a "coherent story" in which "not everything happens" (580-581). For instance, it is *not* meant to be a truth of 'Sylvan's Box' that at the end of the story the box is shot off to the moon.

The problem of squaring an account of fictional truth with the possibility of (merely locally) inconsistent fictions has a long history.[63] Our preferred approach to the problem is to draw on the Principal Reality Principle. For note that inconsistent fictions are (putatively) *determinately* inconsistent: in each case the inconsistency arises from what is explicitly said or depicted in the fiction. The Principal Reality Principle says that p is true in f if and only if, were all the principal fictional truths of f (externally) true, p would be (externally) true as well. So given the Principal Reality Principle, the question of whether p is true in an inconsistent fiction is equivalent to the question of whether a certain *counterpossible*—that is, a counterfactual with an impossible antecedent—is true.[64]

Strikingly, the dialectic concerning the truth-conditions of counterfactuals with impossible antecedents in many ways resembles the dialectic concerning the truth-conditions of fictional claims in inconsistent fictions.[65] Standard accounts of the counterfactual predict that if p is inconsistent, then $\mathsf{p} > \mathsf{q}$ is true no matter what q is, and thus that all counterpossibles are trivially true. Yet counterpossibles differ in their intuitive truth-value:

(48) a. ✓ If Hobbes had squared the circle, he would have performed a mathematical impossibility.

b. ✗ If Hobbes had squared the circle, he would have been JFK's assassin.

As in the case of inconsistent fictions, there is a question of how to square these intuitive judgments with the otherwise powerful and predictive orthodox semantics for the counterfactual conditional.

[63] For helpful discussion, see, for example, Lewis 1978, Currie 1990, Byrne 1993, Poidevin 1995, Priest 1997, Hanley 2004, Woods 2018, Nolan 2021, and Kim forthcoming.

[64] Franzén (2021, §7) makes a similar observation concerning the connection between putatively inconsistent fictions and counterpossibles, in the context of a defense of the Reality Principle (see note 55 above).

[65] For helpful discussion see Kocurek 2021 and the citations therein.

Various options have been explored in the literature, many of which resemble the standard treatments of inconsistent fiction.[66] We do not take a stand on which of these options is best, and are happy to adopt whichever approach to counterpossibles proves most promising. As such, the question of what's fictionally true in an inconsistent fiction is equivalent to the question of what's counterfactually true on the supposition of an impossible antecedent, which is where we're happy to leave the problem. We believe any reasonable view here will be consistent with our central thesis: that for any claim p and work of fiction f, there is a fact of the matter about whether p is true in f. After all, the problem raised by inconsistent fictions is that they make too many fictional claims *determinately* true, not that they make too many fictional claims true *simpliciter*.

11.2 Incomplete fictions

A more pointed objection to our account concerns the possibility of putatively incomplete fictions—cases where for some work of fiction f and claim p, it's a principal truth of f that $\neg(\mathsf{p} \vee \neg\mathsf{p})$.[67] One can imagine an author, say Borges, writing a novel called *The "Red" Cube*, in which there is a cube that is described as being "neither scarlet nor not scarlet". If it helps, imagine that this stipulation about the cube's color is meant to be integral to the plot of the story.

Taking the description of the case at face value, it seems to require that $\Box_{RC}\neg(\mathsf{The\ cube\ is\ scarlet} \vee \neg\mathsf{The\ cube\ is\ scarlet})$, which in turn entails both $\neg\Box_{RC}\mathsf{The\ cube\ is\ scarlet}$ and $\neg\Box_{RC}\neg\mathsf{The\ cube\ is\ scarlet}$. This is a direct counterexample to FEM. And accounting for it would require revising the modal analysis so that $\Box_f$ is able to sometimes quantify over worlds that contain truth-value *gaps*—in other words, worlds at which, for some p, neither p nor $\neg\mathsf{p}$ is true. All of the claims we've made about the logic of fictional truth would then have to be restricted to works of fiction f for which none of the worlds in P-Fic$_f$ are incomplete. (We'll see an example of such a restriction momentarily.)

Ought cases like *The "Red" Cube* be taken at face value? We find it hard to say. This is partly because we're not convinced that there really are any works of fiction like *The "Red" Cube*. Or rather: we're not convinced that there are any works of fiction for which it's a *principal* fictional truth that for some p, neither p nor $\neg\mathsf{p}$. The mere fact that an author says 'In the room was a cube that was neither scarlet nor not scarlet' is not itself particularly strong evidence

[66] See again Kocurek 2021.

[67] Thanks to Hanna Pickard for discussion here.

that it's literally true in the relevant work of fiction that there is a cube that is neither scarlet nor not scarlet. (By analogy: the opening line of *A Tale of Two Cities* does not make it an impossible work of fiction.) Indeed, we speculatively conjecture that many authors would have a hard time explaining what they mean in saying things like 'It was red, but neither scarlet nor not scarlet', and, if pressed, would probably opt for a paraphrase that makes it equivalent to what analytic philosophers would express with claims like: 'It was a borderline shade of scarlet' or 'Its color was an unknowable shade of red'.

That said, we are reticent to rely in any important way on these sorts of hermeneutical speculations. Perhaps a trained philosopher could write a work of fiction like *The "Red" Cube* and really mean it. So suppose that it really is a principal truth of *The "Red" Cube* that there is a cube that is neither scarlet nor not scarlet. What then should we say?

We'll start by noting that truth-value gaps are no more possible than truth-value guts. So given the Principal Reality Principle, fictional claims about *The "Red" Cube* are equivalent to certain kinds of counterpossibles. If counterpossibles are all trivially true, then the *The "Red" Cube* is no counterexample to FEM (since both disjuncts would be true). But if our best theory of counterpossibles requires us to make distinctions between counterfactuals whose antecedents express truth-value gaps and counterfactuals whose antecedents express truth-value gluts—with only the latter kind being trivially true—*if* we must accept all that, then we'd take ourselves to have a genuine counterexample to FEM.

In that case, we would be willing to endorse an account of fictional truth that validates the following weaker principle instead:[68]

Restricted FEM $(\forall \mathsf{p}\colon\ \forall w' \in \text{P-Fic}_f\colon\ w' \in (\mathsf{p} \vee \neg \mathsf{p})) \rightarrow \forall \mathsf{p}\colon\ (\Box_f \mathsf{p} \vee \Box_f \neg \mathsf{p})$

In words: if no truth-value gap is among the principal truths of f, then for any claim, either that claim or its negation is a truth of f.

Though weaker than FEM, Restricted FEM is still quite strong. Few works of fiction explicitly state or depict the presence of truth-value gaps. And we suspect that few authors intend for there to be any either. In fact, we suspect that none of the actually existing works of fiction we've discussed in this paper are ones in which for some p, it's a principal truth of that work that there's no fact of the matter about whether p. So we see no good reason to think that the possibility of works of fiction like *The "Red" Cube* should lead us to deny that for works of fiction like *A Study in Scarlet*, there is a fact of the matter as to the answer to any meaningful question one might ask of it.

[68] Here we make the universal quantification over claims explicit.

11.3 Fictional change

The third and final objection we will consider concerns fictional change. Sometimes an author will start producing a work of fiction, get to a point that looks like partial or total completion, but then decide later to edit the work in various ways—say by changing certain character details or plot points. This is just to say that authors can revise their fictions. When they do, the principal fictional truths of the fiction seem to change *non-monotonically*: some claims go from being principal fictional truths to being indeterminate, or even to being principal fictional falsehoods.[69]

To give a working example, Vince Gilligan, the creator of *Breaking Bad*, originally intended for the character Jesse Pinkman to be killed off in a drug deal gone awry near the end of the show's first season.[70] But while filming the series' second episode, Gilligan was so impressed with actor Aaron Paul's performance as Jesse that he decided to revise the script so as to keep the character alive. Plausibly, then, at the time of the filming of *Breaking Bad*'s pilot, it was a principal fictional truth of *Breaking Bad* that Jesse would die in a drug deal gone awry. But by the time of the filming of the show's third episode, this was no longer the case.

This raises a challenge for an account such as ours that maintains that what's true in a fiction is what's true at a certain world: worlds are individuated by the propositions that are true at them. You cannot change what's true at a particular world; at best, you can change which world you're talking about. So if works of fiction are individuated by the worlds that make their fictional claims true, then strictly speaking you can't change what's true in a work of fiction; at best you can change which work of fiction you're talking about. This might seem absurd, given that fictional change seems not just obviously possible, but obviously ubiquitous. Jesse Pinkman's fate in *Breaking Bad* is but one of an enormous number of examples of this phenomenon.

We see two possible responses to this problem. One response is to deny the possibility of fictional revision. On this view, what looks like fictional change is in fact just the creation of a new work of fiction, one that will inevitably have quite a lot of qualitative overlap with the original (at least as far as the principal fictional truths are concerned). To put it picturesquely: fictional "change" is the author moving their cosmoscope from one fictional world to another, eventually landing on the one that best matches their creative vision. On this view, there are really (at least) two versions of *Breaking Bad*: the original version, in which

[69] See Lee forthcoming for a recent discussion of this phenomenon, which Lee calls "retroactive continuity".

[70] See https://en.wikipedia.org/wiki/Jesse_Pinkman#Production.

it's true that Jesse Pinkman dies in a drug deal gone awry; and the final version, in which it's false that Jesse Pinkman dies in a drug deal gone awry. Plausibly most all of our ordinary thought and talk involving the name '*Breaking Bad*' (and the names of the show's characters) is directed at the final version. So when we say that p is a fictional truth of *Breaking Bad*, what we say is true if and only if p is true in the world of the final version. That said, in some special contexts—like in the interviews with Gilligan where he discusses his original authorial intentions—we can think and talk about the first version of *Breaking Bad*, for which the fictional truths (whether principal or otherwise) can come quite dramatically apart from those of the final version.

Alternatively, we might deny that works of fiction are individuated by the worlds that make their claims true. Instead we might think of works of fiction as functions from times to sets of fictional truths. If a fiction f's principal fictional truths change over time, then there is no single world w that is the timeless world of f; instead, there are as many such worlds as there are times in which the principal fictional truths change. On this view, there is only one fiction *Breaking Bad*; but there are multiple worlds that are "the" world of *Breaking Bad*, at least across different times. At one time t_1 the world of *Breaking Bad* was w_1, and at w_1 it is (externally) true that Jesse Pinkman dies in a drug deal gone awry; but at t_2 the world of *Breaking Bad* is w_2, and there it isn't (externally) true that Jesse Pinkman dies in a drug deal gone awry. By default, when we say that p is true in *Breaking Bad*, we talk about what's true in the most recent version of *Breaking Bad*—in other words, what's true in *Breaking Bad* since the last revision to its principal fictional truths. But in special contexts—like in Gilligan's interview—we can talk about what was true in *Breaking Bad* at earlier times.

It is difficult for us to see any deep considerations in favor of one of these two ways of thinking about fictional change. But thankfully we think either is adequate for our purposes. The fact that what's true in a work of fiction can seem to evolve non-monotonically is no threat to the idea that there is a single world consistent with all that's true in a work of fiction. For either such appearances are misleading—what's changing is not the work of fiction itself, but which work of fiction we're talking about—or the appearances are genuine, and what's true in a work of fiction can change over time.

12 Conclusion

We have argued that fictional truth vastly outstrips determinate fictional truth. In creating a story, an author commits themselves to various claims—the prin-

cipal fictional truths. There are an enormous number of worlds consistent with a story's principal fictional truths, and so if fictional truth were a function of what was in common to all such worlds, then the set of fictional truths would be highly impoverished. But our patterns of rational attitude formation suggest that fictional truth is not a function of what's in common to all such worlds, but is instead a function of what's true in exactly one of those worlds—in particular, the unique world that would correctly represent how things are, had the work of fiction in fact been an accurate work of non-fiction. Although we are in no position to know which world that is, we know that it is as rich in detail as reality itself.

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