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# Epistemic Modals and Contextual Projection

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EPISTEMIC MODALS AND CONTEXTUAL PROJECTION

by

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### **ACKNOWLEDGMENTS**

I would like to take this chance to express my gratitude to Brit Brogaard. You helped me more than you know Brit. Thank you.

**DEDICATION**

I would like to dedicate this paper to my wife, Elaine, without her there would be nothing.

## ABSTRACT

The last few years have seen a growing interest in the semantic analysis of epistemic modal claims. By my lights, the most appealing analysis of epistemic modals is the relativistic approach. However, in their paper, "CIA Leaks", Kai von Fintel and Anthony Gillies present some problems they think the relativistic approach must explain. I aim to defend a variation on the relativistic analysis of epistemic modals. I argue that when we determine the truth-value of sentences containing epistemic modals, we are free to evaluate modal claims from contexts other than the standard context of utterance. This freedom to evaluate the modal claims from different contexts is what I call contextual projection. When contextual projection takes place the sentence can be either true or false, appropriate or inappropriate. Furthermore, I will argue that the general phenomenon that is contextual projection is a common occurrence observable in ordinary language use.

## **Introduction**

The last few years have seen a growing interest in the semantic analysis of epistemic modal claims such as “John might be in his office”. By my lights, the most appealing analysis of epistemic modals is the relativistic approach.<sup>1</sup> However, in their paper, “CIA Leaks”<sup>2</sup>, Kai von Fintel and Anthony Gillies present some problems that they think any relativistic approach must deal with in order to constitute an acceptable semantic analysis of epistemic modals.

My aim in this paper is to defend a variation on the standard relativistic analysis of epistemic modals. The proposed analysis is based on the relativistic framework laid out by John MacFarlane in his papers, “Epistemic Modalities and Relative Truth” and “The Assessment Sensitivity of Knowledge Attributions”. According to this framework, the truth-value of epistemic modals is relative to a context of assessment as well as the standard context of utterance. My defense of the relativistic alternative to standard semantics will draw on the notion of contextual projection. I will argue that when we determine the truth-value of a sentence that contains an epistemic modal, we are free to evaluate modal claims from contexts other than the standard context of utterance. This freedom to evaluate the modal claims from different contexts is what I call contextual

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<sup>1</sup> Recent defenses of the relativistic account include Andy Egan, et al., “Epistemic Modals in Context” and John MacFarlane’s paper “Epistemic Modals are Assessment-Sensitive”.

<sup>2</sup> Their paper is called “CIA Leaks” because they view MacFarlane’s account as a triple-indexed semantics. The three indices are the context of utterance, the index(world time pair), and the context of assessment. Hence, “CIA Leaks”.

projection. When contextual projection takes place the sentence under evaluation can be either true or false, appropriate or inappropriate at a given point of assessment. Furthermore, I will argue that the general phenomenon that is contextual projection is a common occurrence that is observable in ordinary language use.

My plan for the paper is as follows. First, I will provide von Fintel and Gillies' assessment of the data they take to be the motivation for a relativistic semantics for epistemic modals. Next, I will briefly sketch the problems that von Fintel and Gillies raise for the relativistic account. Following my exegesis of von Fintel and Gillies' position, I will provide my defense of a relativistic semantics for epistemic modals. I will then conclude the paper by defending my relativistic account against the objection that contextual projection is *ad hoc*.

### **Questioning the Motivating Data for a Relativistic Analysis**

von Fintel and Gillies start out by examining denial-correction sequences of discourse that contain the epistemic modal 'might'. They claim that the motivating "data" can be seen as neither "innocent nor unambiguous". So, let us take a look at one of their examples:

- a. Alex: The keys might be in the drawer.
- b. Billy: [Looks in the drawer, agitated] They're not. Why did you say that?
- c. Alex: Look, I didn't say they *were* in the drawer. I said they *might* be there – and they might have been. Sheesh.<sup>3</sup>

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<sup>3</sup> von Fintel, Kai and Anthony Gillies. "CIA Leaks". *Philosophical Review*, Vol. 117, No. 1, 2008. Pp. 81.

In response to this sort of example von Fintel and Gillies make a number of observations. The first observation is that “*solipsistic* readings for the modals – readings on which the modals quantify over the evidence available to the speaker at the time of utterance – are virtually always available.”<sup>4</sup> They take this to be the case because it seems to them that Alex is holding onto the idea that her initial utterance was appropriate in the context in which it was uttered. Their second observation is that speaker intuitions are far from uniform. This poses a problem for the relativistic account because assessorhood is clearly determinable, which makes it hard for relativistic theories to accommodate cases other than clear-cut retraction intuitions<sup>5</sup>. The third and final concern they have with the motivating data on which relativistic accounts are generated is that denial and acceptance in discourse is not a straightforward procedure. They claim that relativistic accounts get their motivation from examples like the following:

- a. A: It might be that *P*.
- b. B: No, not-*P*/No, it can't be that *P*.<sup>6</sup>

This type of exchange causes problems for the relativistic approach because if it is taken that what ‘might’ means in A’s utterance is a function of the evidence only available to her, then though B denies what A asserts, there is no evidence

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<sup>4</sup> Ibid. Pp. 82.

<sup>5</sup> The following is an example of a clear-cut retraction: I utter the sentence, ‘John might be at home’. Later, I am told that John has been in Hawaii for the last two weeks. I would retract my earlier statement in light of the new evidence. The retraction is clear-cut because I immediately realize my mistake and take the necessary steps to correct it. Therefore, the concern is that since speaker intuitions vary and if the speaker and the assessor are one and the same, the CIA theory runs into problems in cases other than clear-cut retraction.

<sup>6</sup> Ibid. Pp. 82.



of a genuine disagreement. However, von Fintel and Gillies claim that this example is not decisive.

von Fintel and Gillies believe that the proper motivation for a relativistic semantics must come from exchanges in which denials in discourse track genuine disagreement. So, they offer the following example which is meant to show that “denials don’t always attach to the attitude claim (and sometimes cannot); the same goes for agreement”<sup>7</sup>:

- a. A: I think it’s raining out.
- b. (i) B: No, it isn’t/No, it can’t be.  
(ii) B: ??No, you don’t.<sup>8</sup>

B’s felicitous denial in (i) does not represent a genuine disagreement with A’s utterance. However, B’s utterance in (ii) does represent a genuine disagreement but the utterance is not felicitous due to its target, the mental state(s) of A of which B is not in a position to judge. Now, von Fintel and Gillies think that when modals are introduced the problem becomes even worse because subsequent replies can be directed at either the modal claim itself or the prejacent. Thus, they offer the following example so that it may be shown that “flexibility in the target of denials and acceptances does not explain what needs explaining”<sup>9</sup>:

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<sup>7</sup> Ibid. Pp. 83.

<sup>8</sup> Ibid. Pp. 82.

<sup>9</sup> Ibid. Pp. 83.

Pascal and Mordecai are playing Mastermind. After some rounds where Mordecai gives Pascal hints about the solution, Pascal says:

There might be two reds.

Mordecai, knowing the solution, has a range of possible responses:

- a. That's right. There might be.
- b. That's right. There are.
- c. That's wrong. There can't be.
- d. That's wrong. There aren't.<sup>10</sup>

In this example, Mordecai's responses in (a) and (c) are directed at the modal claim while (b) and (d) are directed at the prejacent. von Fintel and Gillies claim that since these responses are appropriate things for Mordecai to say, the relativistic account should provide the proper flexibility with respect to the target of the responses.

In addition to the previous divergence between the target of denials and acceptances, von Fintel and Gillies claim that "a denial might not target the truth of the proposition expressed but the grounds for asserting that proposition."<sup>11</sup> Their concern is that a *might*-claim is more than just an expression of ignorance about P. When a speaker utters a sentence with a *might*-claim that includes a particular prejacent, the speaker is intending to express the idea that the prejacent is a state of affairs that should not be ignored. They also claim that in many cases the speaker relies on positive evidence which leads them to believe

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<sup>10</sup> Ibid. Pp. 83.

<sup>11</sup> Ibid. Pp. 83.

that the prejacent is indeed a real possibility. This leads them to the following conclusion:

a *might* claim might be open to reproach, retraction, or disavowal, as soon as it becomes clear that the speaker was relying on assumptions that were not reliable—or more generally, when it becomes clear that her epistemic state was not as it should have been—even though it is perfectly true that the prejacent was compatible with what the speaker *knew*.<sup>12</sup>

In other words, a retraction, etc., may be asserted on the grounds that the initial utterance was not asserted on acceptable grounds. This means that the denial is not targeted at the truth of the initial proposition but the grounds on which the proposition was asserted.

Finally, von Fintel and Gillies identify their foremost concern about the motivating data as one of fitness:

On the one hand, it is relatively easy to construct cases in which we have pretty robust intuitions that: (i) a prior *might*-claim is perfectly acceptable; (ii) some intervening discourse reveals some new facts; and (iii) that same *might*-claim could not be acceptably uttered in the posterior situation. But all parties are—or should be—agreed that no pro-CIA conclusion follows from this. What is needed is evidence that the proposition expressed by the prior *might*-claim goes from true to false: and that is the data that, roughly put, bridges the gap between denying an earlier claim and disagreeing with it.<sup>13</sup>

They point out that our intuitions concerning occurrences in which speakers will retract the *might*-claims that they made in their earlier assertion but the examples have to be of a certain type. The retractions have to be targeted at the proposition expressed in the earlier claim. von Fintel and Gillies claim that because of this relativistic accounts rely on examples like the following:

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<sup>12</sup> Ibid. Pp. 83.

<sup>13</sup> Ibid. Pp. 84.

- a. What I said before was false.
- b. That is not true.<sup>14</sup>

The problem, as von Fintel and Gillies see it, is that in cases like these the speaker's intuitions are far less robust.

### **Problems for a Relativistic Analysis**

von Fintel and Gillies' first objection to the relativist analysis is an attack on a prediction that they believe the relativist account must make with respect to time lag. They correctly identify that CIA theories claim that "it is harder for simple *might*-claims to be true relative to an assessor in a later context of assessment *a* than it is for them to be true relative to an assessor in *c* the original context of utterance."<sup>15</sup> However, they don't explain why or how CIA theories can make this prediction. von Fintel and Gillies simply offer the following example to show that CIA theories do not capture our intuitions.

Suppose we are putting a randomly chosen card in an envelope. You catch a glimpse of the card and know that it is a black-suited face card. You say (19a). Then, ten years later when we open the envelope—it's the Jack of Clubs—we cannot complain with (19b)

- (19) a. You: It might be the King of Spades.
- b. Us (*ten years later*): ??Wrong!/What you said is false!<sup>16</sup>

von Fintel and Gillies claim that the time-lagging phenomenon would be unexpected if CIA theories were capturing our intuitions. They claim that we should feel that what was uttered in (19a) is false. However, von Fintel and

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<sup>14</sup> Ibid. Pp. 84.

<sup>15</sup> Ibid. Pp. 86.

<sup>16</sup> Ibid. Pp. 86.

Gillies are simply turning a blind eye to the essential feature of CIA theories, namely that sentences can be evaluated at contexts of assessment other than the original context of utterance.

By appealing to this feature of the CIA theory the utterance in (19a) has a harder time being true as time goes on only when evaluated at a context of assessment that includes the information that the card is actually the Jack of Clubs. von Fintel and Gillies claim that as time goes on (19a) has a harder time being true in the original context of utterance. However, the information available at the later context of assessment is not available at the original context of utterance no matter how much time passes. In a footnote, von Fintel and Gillies attempt to address this reaction by the CIA theorist:

A CIA agent may well retreat to a weaker theory, claiming that not every point of assessment is a *legitimate* point of assessment—only *eligible* or *relevant* points count. Invoking relevant assessors, the CIA can then explain why we cannot disagree over large gulfs of time. To which we reply: no matter the notion of relevance, it will be determined by features of context not by the point of assessment. And we are the first to agree that limiting the extent to which CIA theories rely on the posited novel parameters reduces the implausible predictions such theories make.<sup>17</sup>

Essentially, von Fintel and Gillies are claiming that if the CIA theorist develops a criterion for determining relevant assessors they can select only those assessors that accommodate the relativistic intuitions regarding time-lag. What's more, von Fintel and Gillies claim that the (dis)agreement will be determined by

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<sup>17</sup> Ibid. Pp. 86.

features of context not the point of assessment. However, I will not claim that not every point of assessment is a 'legitimate' point of assessment nor will I introduce the notion of 'relevant assessors'. I simply make use of the fundamental feature of the CIA theory as presented by MacFarlane. Now, von Fintel and Gillies argue that the CIA theory under review theory is at odds with their intuitions about future information affecting the truth-value of past statements. So, their first objection amounts to a denial of the primary feature of the CIA theory without an argument against this feature only a presentation of their intuitions regarding time-lag. Since their first objection has been shown not to address any CIA theory I will not address the objection in my defense. Let us now move on to their second objection, which is based on the function of tense operators.

von Fintel and Gillies point out correctly that unlike the contextualist approach in which the set of facts that the modals quantify over depends on the index (the world time pair), the CIA theory declares the index to be invisible to epistemic modals.<sup>18</sup> They claim that since the CIA theory does not depend on the index there are problems that arise when sentences that have the modal embedded under tense operators are considered because "whatever shifting of

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<sup>18</sup> The CIA theory considers the index to be invisible because it does not restrict the assessment parameters to its respective coordinates, e.g., (actual world, 10:00pm January 17 2010).

the time-coordinate that the tense operator does is promptly ignored by the modal.”<sup>19</sup> They offer the following example to illustrate their point:

Sophie is looking for some ice cream, and checks the freezer. There is none in there. Asked why she opened the freezer, she replies:

- a. There might have been ice cream in the freezer.
- b. PAST(might(ice cream in freezer))<sup>20</sup>

von Fintel and Gillies claim that it is possible that the sentence that Sophie uttered was true even though she knew there was no ice cream in the freezer at the time she uttered the sentence. But, they claim that the CIA theory they have under review cannot deal with this forecast.<sup>21</sup>

They think that the relativist will declare that the modal will place the tense operator on the evaluation of the prejacent so that the modal base picks out a set of worlds that is independent of the index. So, for this example, since Sophie knows there is no ice cream in the freezer at the time of assessment, the modal base does not quantify over any worlds in which there is ice cream in the freezer. Therefore, the *might*-claim embedded under the tense operator will turn out to be false. von Fintel and Gillies see this as a major problem for the relativistic account because it would mean that many of the *might*-claims we make could be false when uttered in sentences constructed like the one in the preceding example, such that the tense operator outscopes the modal. This claim will be addressed in my defense.

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<sup>19</sup> Ibid. Pp. 87.

<sup>20</sup> Ibid. Pp. 87.

<sup>21</sup> Egan et al also make this observation.

The next two objections that von Fintel and Gillies raise for the relativistic account will deal with differences available to the speaker and the evidence available to the assessor. The first of the two objections deals with cases in which the assessor has less evidence available than the speaker does. Before they level their attack, von Fintel and Gillies make the following caveat, “We will assume here that the CIA-analysis should extend to the dual of *might*: *must*. (If *might* and *must* are duals, it is hard to see how there is any room to favor CIA theories for one and not the other.)”<sup>22</sup> Again, the relativistic analysis will hinge on the assessors evidence at the time of the assessment. von Fintel and Gillies believe the CIA theory must predict that an assessor should reject any *must*-claim whose truth would exclude worlds that are compatible with the states of affairs that obtain in the context of assessment. von Fintel and Gillies provide the following example in order to shed light upon the shortfall:

The Boss has two informants, Jack and Zack. There is a meeting of spies in a room, and The Boss, Jack and Zack know that one and only one of their (conveniently named) comrades *P*, *Q*, *R* is a turncoat. Jack looks through his peep hole and sees clearly that it is either *P* or *Q* who is the turncoat, and Zack looks through his peep hole and sees clearly that it is either *Q* or *R* who is the turncoat. Each slips The Boss a note informing him:

- a. [From Jack]: It must be that either *P* is the turncoat or *Q* is the turncoat.
- b. [From Zack]: It must be that either *Q* is the turncoat or *R* is the turncoat.

The Boss gets the messages, concluding that *Q* is the turncoat.<sup>23</sup>

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<sup>22</sup> Ibid. Pp. 88.

<sup>23</sup> Ibid. Pp. 88.



Now, by von Fintel and Gillies' lights, the CIA theory cannot account for this exchange. For, at the Boss' context of assessment, both Jack's and Zack's sentences are false because the Boss has no information about who the turncoat is and the modal base will contain *P*-worlds, *Q*-worlds, and *R*-worlds. Since the modal base contains all three worlds, both Jack and Zack's sentences end up being false. Clearly, this is not an acceptable outcome for the relativistic approach. This point will also be addressed in my positive account of the relativistic analysis.

Next, von Fintel and Gillies discuss examples in which the assessor has more evidence than the speaker does. They claim that the CIA theory would predict a rejection of any *might*-claim whose truth-value, with respect to the context of assessment, would call for worlds that are incompatible with the states of affairs that obtain in the context of assessment. But, von Fintel and Gillies point out that "we can easily agree to an epistemic modal *might*  $\varphi$  in conversation when we know whether  $\varphi$ ."<sup>24</sup> They offer the following example:

After some rounds where Mordecai gives Pascal hints about the solution, Pascal says:

There might be two reds.

Mordecai – who knows the solution – can reply by agreeing with the modal claim:

That's right. There might be.<sup>25</sup>

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<sup>24</sup> Ibid. Pp. 90.

<sup>25</sup> Ibid. Pp. 90.

von Fintel and Gillies argue that if disagreement cases are the motivating data for the CIA theory, then examples like the previous one should force us in a different direction. In the example, Mordecai knows the exact amount of reds that are left so, Pascal's *might*-claim is either false at Mordecai's point of assessment, or "his reply violates the maxim of quantity".<sup>26</sup> Now, von Fintel and Gillies are correct to point out the lack of accountability the relativistic account under review has when it comes to this case. However, this is one of the cases that sparked my idea of contextual projection.

Next, von Fintel and Gillies' set their sights on sentences containing the disjunction of two existential modal claims. They refer to a previous example:

Sally does not know where Joe is, but she knows he is in either Boston or New York. She says:

Joe might be in Boston or he might be in New York

This entails two *might*-claims:

- a. Joe might be in Boston.
- b. Joe might be in New York.<sup>27</sup>

von Fintel and Gillies show that the CIA theory under review would predict that if Sally uttered the unified disjunct in the presence of anyone who knows Joe's location, they would disagree with her claim. They would disagree because the unified disjunction entails the separate disjuncts and the CIA theory calls for one

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<sup>26</sup> Ibid. Pp. 90.

<sup>27</sup> Ibid. Pp. 90.

or the other to be false at any point of assessment that includes the knowledge of Joe's location. Their point is illustrated by the strangeness of George's reply in the first exchange and Sally's reply in the second:

1. a. Sally: Joe might be in Boston or he might be in New York.  
b. George: ??Nah/That's false. He's in New York.
2. a. Sally: Joe might be in Boston or he might be in New York.  
b. George: he can't be in Boston. He's in New York this week.  
c. Sally: ??Oh, then I guess I was wrong.<sup>28</sup>

Next, von Fintel and Gillies consider *might*-claims that are embedded under factives. They point out that “fatives – like *realize* – presuppose the truth of their complements”<sup>29</sup> and they plan to show that “*might* can embed under *realize* even when both speaker and assessor think the complement of the *might*-claim is false.”<sup>30</sup> According to the CIA theory under review, there should be presupposition failure in cases where the modals embed under factives. They provide the following example to illustrate their concerns:

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<sup>28</sup> Ibid. Pp. 91.

<sup>29</sup> Ibid. Pp. 93.

<sup>30</sup> Ibid. Pp. 93.

Blofeld and Number 2 are at SPECTRE headquarters plotting Bond's demise. Bond planted a bug, and some misleading evidence pointing to his being in Zurich, and slipped out. Now he and Leiter are listening in from London. As they listen, Leiter is getting a bit worried: Blofeld hasn't yet found the misleading evidence that points to Bond being in Zurich. Leiter turns to Bond and says:

If Blofeld realizes you might be in Zurich, you can breathe easy – he'll send his henchmen to Zurich to find you.

And he might continue:

If he doesn't realize soon that you might be in Zurich, we better get out of here.

Bond shuts his briefcase, straightens his tie, and tells Miss Money Penny his martini may have to wait. But what he *does not* and *cannot do* is complain to Leiter that he isn't in Zurich.<sup>31</sup>

von Fintel and Gillies point out that this example would be contrary to what the CIA theory would call for. For, both Bond and Leiter know that Bond is not in Zurich and as von Fintel and Gillies put it, "any plausible way of drawing the boundaries locates Bond – and Leiter – in a point of assessment *a* determining a modal base...that has only not-Zurich-worlds in it."<sup>32</sup> This is clearly not what we want because the relativistic account turns out to offer explanations that are contrary to the empirical facts. So, let us now turn to my defense of the relativistic analysis.

### **Plugging the Leak**

First, let me start with the thesis of the relativistic analysis; epistemic modals quantify over the possibilities that are functions of the evidence available

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<sup>31</sup> Ibid. Pp. 93.

<sup>32</sup> Ibid. Pp. 94.

within a context of assessment. Let us recall one of von Fintel and Gillies' earlier examples:

- a. Alex: The keys might be in the drawer.
- b. Billy: [Looks in the drawer, agitated] They're not. Why did you say that?
- c. Alex: Look, I didn't say they *were* in the drawer. I said they *might* have been. Sheesh.<sup>33</sup>

Now, if we look at Alex's response in (c) we see that she is defending her earlier *might*-claim because she can assess the claim at the context in which the claim was made. Alex realizes that the newly acquired evidence – the keys not being in the drawer – was not included in the context of her *might*-claim. Alex is free to evaluate the *might*-claim at its original context in order to defend her justification for making this claim. What's more, Alex is also free to assess the *might*-claim at a context that does include the newly acquired evidence. The following exchange illustrates my point:

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<sup>33</sup> Ibid. Pp. 81.

- a. Alex: The keys might be in the drawer.
- b. Billy: [Looks in the drawer, agitated] They're not. Why did you say that?
  - (i) Alex: Look, I didn't say they *were* in the drawer. I said they *might* be there – and for all I knew at that time – they might have been.
  - (ii) Alex: Look, I didn't say they *were* in the drawer. I said they *might* be there – and they might have been – but, as it turns out they weren't. If I would have known that the keys were not in the drawer I would not have said that they might have been.

Now, we see in (i) that Alex is defending her *might*-claim by assessing the claim at the context of utterance and in (ii) she is defending her *might*-claim by assessing the claim at the context of utterance and she is retracting her claim by assessing it at the context of assessment, which incorporates the new evidence. The ability to evaluate an utterance at points of assessment other than the original context of utterance is what I call contextual projection. In essence, we are able to project our evaluation of an utterance to any point of assessment that lies on the continuum between when the sentence was uttered and the present. This sounds technical but the common way to express this idea is 'taking a look from a different point of view'. Now, it is important to remember that the contextual features of the particular points of assessment are what is used to evaluate the given statement. Therefore, it is the contextual parameters that

provide the criterion for truth, not the psychology of the assessor inhabiting that point of assessment.

By incorporating the idea of contextual projection the relativistic analysis can account for both Alex's defense of the propriety and truth of her *might*-claim – when assessed at the context of utterance – and it can also account for the retraction of her claim – when assessed at the context of assessment that includes the new evidence – which picks out the genuine disagreement any semantic analysis of epistemic modals must account for.

Now, barring the introduction of contextual projection, von Fintel and Gillies do not think that their previous example shows what they take to be the real motivating force behind the relativistic account, namely, genuine disagreement. So, they offer the following example to show that “denials don't always attach to the attitude claim (and sometimes cannot); the same goes for agreement”<sup>34</sup>:

- a. A: I think it's raining out.
- b. (i) B: No, it isn't/No, it can't be.
- (ii) B: ??No, you don't.<sup>35</sup>

As stated before, B's felicitous denial in (i) does not represent a genuine disagreement with A's utterance. However, B's utterance in (ii) does represent a

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<sup>34</sup> Ibid. Pp. 83.

<sup>35</sup> Ibid. Pp. 82.

genuine disagreement but, the utterance is not felicitous. von Fintel and Gillies point out that when epistemic modals are introduced the problem gets worse because subsequent replies can be directed at either the modal claim itself or the prejacent. So, they offer the following example to show that “flexibility in the target of denials and acceptances does not explain what needs explaining”<sup>36</sup>:

Pascal and Mordecai are playing Mastermind. After some rounds where Mordecai gives Pascal hints about the solution, Pascal says:

There might be two reds.

Mordecai, knowing the solution, has a range of possible responses:

- a. That’s right. There might be.
- b. That’s right. There are.
- c. That’s wrong. There can’t be.
- d. That’s wrong. There aren’t.<sup>37</sup>

von Fintel and Gillies are correct to point out that Mordecai’s responses in (a) and (c) are directed at the modal claim while (b) and (d) are directed at the prejacent. They also claim that since these responses are appropriate things for Mordecai to say, the relativist analysis should provide the proper flexibility with respect to the target of the responses but it does not. So, let us employ the notion of contextual projection.

Armed with contextual projection, the relativistic analysis can provide the proper flexibility to allow for all of Mordecai’s responses. In (a), Mordecai is

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<sup>36</sup> Ibid. Pp. 83.

<sup>37</sup> Ibid. Pp. 83.



assessing Pascal's utterance in the context in which it was uttered and he is agreeing with Pascal's *might*-claim. In (b), Mordecai is assessing Pascal's utterance in the context that incorporates his knowledge of the game and he graciously informs Pascal of the current state of their game in which there are two reds. In (c), Mordecai is assessing Pascal's utterance in the context in which it was uttered but he is disagreeing with Pascal's *might*-claim. In (d), Mordecai is assessing Pascal's utterance in the context that incorporates his knowledge of the game and he graciously informs Pascal of the current state of their game in which there are not two reds.

Next, von Fintel and Gillies claim that "a denial might not target the truth of the proposition expressed but the grounds for asserting that proposition."<sup>38</sup> Their point is that a *might*-claim is more than just an expression of ignorance about *P*. The proper way to read a sentence with a *might*-claim that includes a particular prejacent is to read the sentence as expressing the idea that the prejacent is a possibility that should not be ignored. What's more, von Fintel and Gillies point out that in many cases the speaker relies on positive evidence that leads them to believe that the prejacent is indeed a 'real' possibility. From this, they conclude that a retraction, etc., may be asserted on the condition that the initial utterance was not asserted on acceptable grounds, which means the denial is not targeted at the truth of the initial proposition but the grounds on which the

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<sup>38</sup> Ibid. Pp. 83.

proposition was asserted. The following is an example where the speaker was relying on assumptions that were not reliable:

- My wife and I have decided to do some remodeling in our house. My cousin Steve is a carpenter and we want him to come over and do the work for us.
- a. Jeff: Steve might be able to install the carpet in the living room.
  - b. Elaine: No, I talked to Steve and he said that he doesn't know how to install the carpet in our living room that is not a carpentry skill.
  - c. Jeff: Oh, OK, I was wrong to assume that he would know how to install carpet by virtue of the fact that he is a carpenter.

Now, let us apply contextual projection. In this case, Jeff's retraction is targeted at the initial *might*-claim he made in (a). He is justified in retracting his initial claim because he is assessing the claim at a context that includes the new evidence about his faulty assumptions. What's more, Jeff can claim that it was both appropriate and true, relative his context of assessment in (a), to say that Steve might have been able to install the carpet because the evidence introduced in (b) was not available to him in the context of (a). This analysis satisfies von Fintel and Gillies' demand for a retraction that targets the proposition expressed in the initial *might*-claim.

From here, von Fintel and Gillies move on to their objection that is based on the function of tense operators. Their claim is that since relativistic accounts declare the index to be invisible to epistemic modals, problems arise when the modal is embedded under a tense operator, specifically, that "whatever shifting of the time-coordinate that the tense operator does is promptly ignored by the

modal.”<sup>39</sup> As mentioned above, they offer the following example to illustrate their point:

Sophie is looking for some ice cream, and checks the freezer. There is none in there. Asked why she opened the freezer, she replies:

- a. There might have been ice cream in the freezer.
- b. PAST)might(ice cream in freezer))<sup>40</sup>

Now, as the relativistic analysis stands without contextual projection, the modal will place the tense operator on the evaluation of the prejacent so that the modal base picks out a set of worlds that is independent of the index. For this example, since Sophie knows that there is no ice cream in the freezer at the time of assessment, the modal does not quantify over any worlds in which ice cream is in the freezer. Therefore, the *might*-claim that is embedded under the tense operator will turn out to be false. However, if we incorporate contextual projection into the relativistic analysis, we can see how it is possible for the sentence that Sophie uttered to be true even though she knew that there was no ice cream in the freezer. Sophie can evaluate her *might*-claim at the context of action(checking the freezer) via contextual projection:

Sophie is looking for some ice cream, and checks the freezer. There is none in there. Asked why she opened the freezer, she replies:

- a. There might have been ice cream in the freezer.
- b. PAST(might(ice cream in freezer))<sup>41</sup>

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<sup>39</sup> Ibid. Pp. 87.

<sup>40</sup> Ibid. Pp. 87.

<sup>41</sup> Ibid. Pp. 87.

Sophie's reply is justifying her checking of the freezer for ice cream because the context in which she checked the freezer did not contain the knowledge that there was no ice cream in the freezer. So, Sophie can account for the propriety and truth of her utterance when she assesses her claim at the context of action – checking the refrigerator – and she can account for the propriety and falsity of her utterance when she assesses her claim at the context in which the knowledge of the freezer's contents is available. Therefore, *ala* contextual projection, the relativistic account allows for the modal to accommodate the shifting of the time-coordinate the tense operator calls for.

von Fintel and Gillies then move on to an objection based on the differences between the evidence available to the speaker and the evidence available to the assessor. Before marshalling their attack, von Fintel and Gillies make the following assumption, "we will assume here that the CIA-analysis should extend to the dual of *might*: *must*. (If might and must are duals, it is hard to see how there is any room to favor CIA theories for one and not the other.)"<sup>42</sup> Now, von Fintel and Gillies believe the relativist account must predict that an assessor should reject any *must*-claim whose truth would exclude worlds that are compatible with the states of affairs that obtain at the context of assessment. They provide the following example to shed light on the supposed shortfall of the relativistic account:

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<sup>42</sup> Ibid. Pp. 88.

The Boss has two informants, Jack and Zack. There is a meeting of spies in a room, and The Boss, Jack and Zack know that one and only one of their (conveniently named) comrades *P*, *Q*, *R* is a turncoat. Jack looks through his peep hole and sees clearly that it is either *P* or *Q* who is the turncoat, and Zack looks through his peep hole and sees clearly that it is either *Q* or *R* who is the turncoat. Each slips The Boss a note informing him:

- a. [From Jack]: It must be that either *P* is the turncoat or *Q* is the turncoat.
- b. [From Zack]: It must be that either *Q* is the turncoat or *R* is the turncoat.

The Boss gets the messages, concluding that *Q* is the turncoat.<sup>43</sup>

von Fintel and Gillies claim that the relativist analysis cannot account for this exchange because at the Boss' context of assessment, both sentences, Jack's and Zack's, are false since The Boss has no information about who the turncoat is, therefore the modal base will contain *P*-worlds, *Q*-worlds, and *R*-worlds. But this is not how the exchange would go. The Boss would assess each of the claims at the context in which the claims were made. The Boss would assess Jack's claim at the context in which Jack made the claim which includes the disjunction of either *P* or *Q* and he would assess Zack's claim at the context in which Zack made the claim which includes the disjunction of either *Q* or *R*. So, both Jack and Zack's statements are appropriate and true when assessed at the context in which they were uttered. Hence, The Boss could accurately conclude that the turncoat is *Q* by eliminating the non-recurring variables. The modal base does not contain *P*-worlds, *Q*-worlds, and *R*-worlds because The Boss can accept the

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<sup>43</sup> Ibid. Pp. 88.

truth of both claims – by assessing them at the respective contexts in which they were made – so that he may arrive at the conclusion.<sup>44</sup>

Next, von Fintel and Gillies discuss examples in which the assessor has more evidence than the speaker does. They reason that the relativistic account would predict a rejection of any *might*-claim whose truth-value, with respect to the context of assessment, would call for worlds that are incompatible with the facts in the context of assessment. But, von Fintel and Gillies point out that “we can easily agree to an epistemic modal *might*  $\varphi$  in conversation when we know whether  $\varphi$ .”<sup>45</sup> Let us refer to the earlier example where Mordecai and Pascal are playing Mastermind:

After some rounds where Mordecai gives Pascal hints about the solution, Pascal says:

There might be two reds.

Mordecai – who knows the solution – can reply by agreeing with the the modal claim:

That’s right. There might be.

von Fintel and Gillies argue that if disagreement cases are the motivating data for the relativistic analysis, then examples like this one should force us to object to Mordecai’s response. In the example, Mordecai knows the exact amount of reds

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<sup>44</sup> Something needs to be said here concerning the idea of updating. The relativist does not have to deny that it is impossible for an evaluator to update his epistemic state; for, in this example that is exactly what the boss is doing by assessing the claims at different contexts. So, contextual projection can indeed be seen as updating.

<sup>45</sup> Ibid. Pp. 90.

that are left so they think that Pascal's *might*-claim "is either false at the point of assessment he occupies (if there aren't two reds) or his reply violates the maxim of quantity (if there are)."<sup>46</sup> On the other hand, if we incorporate contextual projection into the relativistic analysis, we can account for Mordecai's response.

In this example, Mordecai is assessing Pascal's claim at the context in which the claim was uttered. So, the evidence of the two reds is not available in the context in which Pascal makes his *might*-claim making the claim both appropriate and true. Mordecai is assessing Pascal's claim at the context in which it was uttered so he can appropriately agree with Pascal by saying that there might be two reds. Now, Mordecai's utterance "That's right. There might be." Is true when assessed at a context that does not include the knowledge of the two reds and false when assessed at a context that does include the knowledge of the two reds. By utilizing contextual projection, the relativist analysis can account for Mordecai's intuitive response.

von Fintel and Gillies' next objection centers on the disjunction of two existential modal claims. Let us refer to their previous example:

Sally does not know where Joe is, but she knows he is either in Boston or New York. She says:

Joe might be in Boston or he might be in New York

This entails two *might*-claims.

- a. Joe might be in Boston
- b. Joe might be in New York.

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<sup>46</sup> Ibid. Pp. 90.

Now, we recall von Fintel and Gillies as having shown that the relativistic account would predict that if Sally uttered the unified disjunction in the presence of anyone who knows Joe's location, they would disagree with her claim. They would disagree because the unified disjunction entails the separate disjuncts and the relativistic analysis calls for one or the other to be false at any point of assessment that includes the knowledge of Joe's location. Their point is illustrated by the strangeness of George's reply in the first exchange and Sally's reply in the second:

- a. Sally: Joe might be in Boston or he might be in New York.
  - b. George: ??Nah/That's false. He's in New York
- 
- a. Sally: Joe might be in Boston or he might be in New York.
  - b. George: He can't be in Boston. He's in New York this week.
  - c. Sally: ??Oh, then I guess I was wrong.<sup>47</sup>

Under the new relativistic analysis, George's response in the first exchange does not seem so strange because he is assessing Sally's binary *might*-claim at a context in which the knowledge of Joe's location is available. What he said is appropriate and true when assessed from his context of utterance. But, he could also agree with Sally's binary claim if he assesses it from the context in which Sally's utterance was made. What's more, Sally's response in the second

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<sup>47</sup> Ibid. Pp. 91.



exchange can be explained by my analysis. In the example, Sally says “Oh, then I guess I was wrong” because she is assessing her previous *might*-claim at a context in which the knowledge of Joe’s location is made available to her. Furthermore, Sally can justify her previous claim by pointing to the fact that when the claim is assessed at the context in which it was uttered the claim is both appropriate and true. Again, armed with contextual projection, the relativistic analysis can accommodate our intuitions about how exchanges like the one in the previous example would go.

Now, we come to von Fintel and Gillies’ final objection to the relativistic account. This objection centers on the activity of *might*-claims that are embedded under factives. They point out that “factives – like *realize* – presuppose the truth of their complements” and they try to show that “might can embed under realize even when both speaker and assessor think the complement of the *might*-claim is false.”<sup>48</sup> They claim the relativistic account should predict that there would be presupposition failure in cases where the modals are embedded under factives. Let us consider their example:

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<sup>48</sup> Ibid. Pp. 93.

Blofeld and Number 2 are at SPECTRE headquarters plotting Bond's demise. Bond planted a bug, and some misleading evidence pointing to his being in Zurich, and slipped out. Now he and Leiter are listening in from London. As they listen, Leiter is getting a bit worried: Blofeld hasn't yet found the misleading evidence that points to Bond being in Zurich. Leiter turns to Bond and says:

If Blofeld realizes you might be in Zurich, you can breathe easy – he'll send his henchmen to Zurich to find you.

And he might continue:

If he doesn't realize soon that you might be in Zurich, we better get out of here.

Bond shuts his briefcase, straightens his tie, and tells Miss Money Penny his martini may have to wait. But what he *does not* and *cannot do* is complain to Leiter that he isn't in Zurich.<sup>49</sup>

But this is just another case where Leiter's speech is a function of his appreciation for the context in which Blofeld and Number 2 are acting. Leiter is assessing the information he receives from the bug at the context in which Blofeld and Number two are acting. Then he is using the information from that context when he speaks to Bond. Of course, Bond and Leiter both know that Bond is not in Zurich so if they were to assess the actions of Blofeld and Number 2 at their current context, the modal base would have only not-Zurich worlds in it but, they are not assessing the actions of Blofeld and Number 2 at their current context. They are using the information they generate by assessing Blofeld and Number 2's actions at the context in which the actions are occurring. We can see

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<sup>49</sup> Ibid. Pp. 93.

how information that is gained by assessing the actions at the context in which the actions are taking place can be used in a context that includes the plans of Bond and Leiter.

### **No Ad Hocery Here**

I will now address the objection that the introduction of contextual projection is *ad hoc*. I assume that the first line of attack would be to say that it is silly to think that we have the right to assess sentences containing modal claims at any context we choose. However, it seems to me that contextual projection happens all the time. Any time you here someone say things like “If I were you I would...”, “That’s not what I would have thought if I were her”, “She said P because at that time she didn’t know that Q”, etc., you are observing contextual projection. Consider the following example:

Mary and John are playing a game of chess. Mary is a pretty good player but she is not able to look more than one move ahead. John knows this and he plans to exploit Mary’s weakness during the game. It is John’s turn and he thinks to himself:

John: [If I move my queen one space forward Mary will not realize that I am setting the stage to take her bishop. If I were her, I would not realize that my(John’s) move would place my(Mary’s) bishop in danger, so, I would move my(Mary’s) pawn up one space after I(John) move my(John’s) bishop.

John moves his queen; Mary moves her pawn; and John takes her bishop.

In this example, John is assessing the game at Mary’s context so he can use the information he gains from ‘seeing the game through her eyes’ to win the game. John is evaluating the game from Mary’s point of view. His best chance to ‘see

the game through her eyes' is to evaluate the game from the context at which Mary is acting. John's freedom to evaluate the game from different contexts of assessment is an example of contextual projection. The same type of contextual projection takes place in one of von Fintel and Gillies' examples:

- a. Alex: The keys might be in the drawer.
- b. Billy: [Looks in the drawer, agitated] They're not. Why did you say that?
- c. Alex: Look, I didn't say they *were* in the drawer. I said they *might* be there – and they might have been. Sheesh.

Alex's reply in (c) is a defense of her earlier *might*-claim. She is justified in defending her claim because she is free to assess her earlier *might*-claim at the context in which it was uttered, a context in which her statement was both true and appropriate.

### **Conclusion**

I am not claiming that contextual projection is a normative concept; I am simply identifying a phenomenon that occurs in our world we just call it by another name, empathy. We use empathy as a tool to help understand the thoughts and feelings of those we come in contact with. Similarly, we use contextual projection as a tool to evaluate modal claims so that we may make use of information that may reveal itself at contexts other than the initial context of utterance. It seems to me that in order to argue against the idea of contextual projection, one would have to show that either the phenomenon does not occur or that contextual projection does not supply the relativistic analysis with the

tools needed to provide an accurate semantic analysis of epistemic modals. Furthermore, the relativistic approach, and contextual projection in particular, should not be taken seriously just because it is serviceable. Relativism, armed with contextual projection, should be taken seriously because we do indeed evaluate the world around us from contexts of assessment. However, I am sure that attacks will be made on the veracity of contextual projection with respect to a proper semantic theory of epistemic modals. But, who knows, my relativistic account just *might* hold up.

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