

Guiding issue: (bare) epistemic modal claims *seem* absolute, yet epistemic possibility is a relative matter; how to resolve this mismatch between linguistic expression and subject matter?

SIMPLE SEMANTICS

$\llbracket \ulcorner \text{might } p \urcorner \rrbracket^{f,w} = 1$ iff $\exists w' \in f(w) : \llbracket p \rrbracket^{f,w'} = 1$.

CONTEXTUALIST POST-SEMANTICS

$\ulcorner \text{might } p \urcorner$ is true as uttered in c iff $\llbracket \ulcorner \text{might } p \urcorner \rrbracket^{c,f_c,w_c} = 1$.

- $\llbracket \ulcorner \text{might } p \urcorner \rrbracket^c = \{w : \llbracket \ulcorner \text{might } p \urcorner \rrbracket^{c,f_c,w} = 1\}$. Its truth depends entirely on how the world is with respect to the contextually relevant modal base f_c .

RELATIVIST POST-SEMANTICS

$\ulcorner \text{might } p \urcorner$ is true as uttered in c_U and assessed in c_A iff $\llbracket \ulcorner \text{might } p \urcorner \rrbracket^{c_U,f_{c_A},w_{c_U}} = 1$.

- $\llbracket \ulcorner \text{might } p \urcorner \rrbracket^c = \{\langle w, f \rangle : \llbracket \ulcorner \text{might } p \urcorner \rrbracket^{c,f,w} = 1\}$. Its truth depends entirely on how the world is with respect to f .

§1 Earlier attempts to test the theories

Since relativism holds that the truth of an epistemic modal claim varies by evidence in the context of assessment, a helpful starting point is to explore intuitions in eavesdropper scenarios.

Fat Tony. Fat Tony is a mobster who has faked his own death in order to evade the police. He secretly plants highly compelling evidence of his murder at the docks. The evidence is discovered by the authorities, and word gets out about his apparent death. The next evening, from his safehouse, Fat Tony watches a panel of experts on the news discussing the question of whether he is dead.

Expert A has had a good look at the evidence found at the scene. “Fat Tony is dead”, he says. Expert B has also had a good look at the evidence, but his assessment is more cautious. B says,

(1) Fat Tony might be dead.

- Prima facie: contextualism should predict that what B said is true; relativism should predict that what B said is false (as evaluated in this context). Standing judgments in the literature suggested the relativist prediction here was correct (but see Dowell (2011)).

Knobe & Yalcin (2014) find evidence against the standing judgment in the literature:

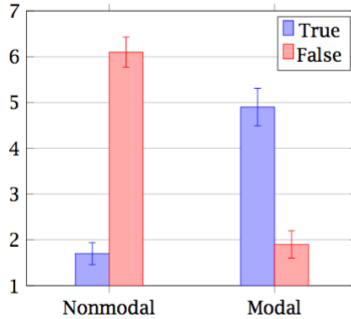


Figure 1: Knobe & Yalcin data.

The problem is that K&Y’s finding is compatible with relativism!

- This is because the relativist could “go flexible” and say that the evidence in the context of assessment is whatever evidence is *relevant* there, and in this case many people judge that the relevant evidence just is B’s evidence (not their own evidence, which happens to be stronger).

Worse, even if K&Y’s finding *had* revealed that people tend to think what B said is false, this result is compatible with contextualism!

- The contextualist could say that her theory is one on which assessments about the truth/falsity of an epistemic modal claim can be used as evidence about which claim was made by the original utterance (cf. Dowell (2013)).

§2 Structural differences

A different way to evaluate the predictions of contextualism and relativism: explore intuitions of incompatibility of two conflicting claims.

Background: The police are on the trail of Fat Tony, a local mobster. This morning, they learn of a rumor that Fat Tony has died at the docks.

The Chief of the Police assigns Inspector A to examine the evidence at the docks. Meanwhile, the District Attorney assigns Inspector B to review the footage from the security camera at the docks.

In the first type of case, the two inspectors make conflicting modal utterances:

Conflicting Utterances Modal: Inspector A takes a good look at the evidence down by the docks, and concludes that it suggests, but does not prove, that Fat Tony died at the docks. The Chief calls Inspector A at the docks and asks him, “What have you found?”

Inspector A replies, “Fat Tony could have died at the docks.”

Meanwhile, Inspector B reviews the security camera footage and concludes that the footage proves that Fat Tony did not die at the docks. The District Attorney calls Inspector B and asks him, “What have you found?”

Inspector B replies, “Fat Tony couldn’t have died at the docks.”

- (Q) Do you agree or disagree with the claim: “At least one of the inspector’s claims must be false”?

Predictions:

- Contextualism:
 - Predicts A has said that D is compatible with $f_{c_A}(w)$; B has said D is NOT compatible with $f_{c_B}(w)$.
 - If $f_{c_A} = f_{c_B}$, then A and B's claims are incompatible: predicts agreement on (Q) to the extent people think $f_{c_A} = f_{c_B}$.
 - If $f_{c_A} \neq f_{c_B}$, then A and B's claims are compatible: predicts disagreement on (Q) to the extent people think $f_{c_A} \neq f_{c_B}$.
- Relativism:
 - Predicts B says the negation ($\neg\Diamond D$) of the proposition A asserts ($\Diamond D$).
 - Relative to any particular context of assessment, either $\Diamond D$ is false at that context or $\neg\Diamond D$ is false at that context.
 - So, predicts agreement on (Q).

Conflicting Assessments Modal: Inspector A takes a good look at the evidence down by the docks, and concludes that it suggests, but does not prove, that Fat Tony died at the docks. Afterwards, he goes home. That evening, Inspector A and his wife watch the Chief of Police talking with reporters on TV. The reporters on the news ask the Chief what his investigation had found.

The Chief tells the reporters: “Fat Tony could have died at the docks.”

Inspector A's wife knows that Inspector A was examining the evidence at the docks and so she asks him, “Is that right?”

Inspector A replies, “What the Chief said is true.”

Meanwhile, Inspector B reviews the security camera footage and concludes that the footage proves that Fat Tony did not die at the docks. That evening he watches the same TV broadcast with his wife, and they also hear the Chief tell the reporters, “Fat Tony could have died at the docks.”

Inspector B's wife knows that Inspector B was examining the evidence at the docks and so she asks him, “Is that right?”

Inspector B replies, “What the Chief said is false.”

(Q) Do you agree or disagree with the claim: “At least one of the inspector's claims must be false”?

- \llbracket “What the Chief said” $\rrbracket^{c,f,w}$ = the proposition the Chief asserted at w .
- Assume a deflationary semantics for the propositional truth- and falsity-predicates:

SIMPLE TRUTH:

- a. The proposition expressed by $\lceil\phi$ is true \rceil as uttered in c is necessarily equivalent to the proposition ϕ refers to at w_c .
- b. The proposition expressed by $\lceil\phi$ is false \rceil as uttered in c is necessarily equivalent to the negation of the proposition ϕ refers to at w_c .

- Contextualism:
 - Predicts Chief has said that D is compatible with $f_{c_C}(w)$.
 - So, A has said that D is compatible with $f_{c_C}(w)$ and B has said that D is NOT compatible with $f_{c_C}(w)$, and thus Contextualism predicts agreement on (Q).
- Relativism:
 - Predicts Chief has said $\diamond D$.
 - So, B says the negation ($\neg \diamond D$) of the proposition A asserts ($\diamond D$).
 - Relative to any context of assessment, either $\diamond D$ is false at that context or $\neg \diamond D$ is false at that context, and thus Relativism predicts agreement on (Q).

	Two Utterances	Two Assessments
Contextualism	Q ✗/ ✓	Q ✓
Relativism	Q ✓	Q ✓

§3 Testing the predictions

We compared incompatibility judgments in **Conflicting Utterances** and **Conflicting Assessments** cases across a modal and non-modal claim. In the non-modal versions, the target claim(s) were “Fat Tony died / didn’t die at the docks” rather than “Fat Tony could have died / couldn’t have died at the docks.”

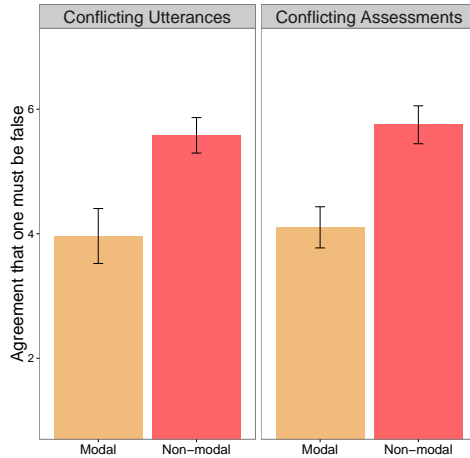


Figure 2: Participants’ mean level of agreement with Q. Errors bars indicate $\pm 1SE$.

- A 2 x 2 ANOVA revealed that participants’ ratings were significantly affected by whether or not the claims involved an epistemic modal, $F(1, 116) = 22.922$, $p < .001$, $\eta_p^2 = .165$, such that they strongly agreed that one of the inspector’s claims must be false when they uttered/assessed the non-modal claim ($M = 6.67$, $SD = 1.65$), but much less agreed that one of the inspectors’ claims must be false when they uttered/assessed the epistemic modal claim ($M = 4.04$, $SD = 2.05$), $t(118) = 4.82$, $p < .001$, $d = .882$.¹

¹We did not observe a significant difference in between the Conflicting Utterances and Conflicting Assessment cases $F < 1$, or an interaction effect between these two variables, $F < 1$.

Upshot: we want to predict incompatibility-ambivalence in both Utterance (contra relativism) and Assessment cases (contra contextualism and relativism).

§4 Contextualist situation semantics

Our strategy: we want the domain-fixing function to be able to vary across contexts (thus predicting ambivalence towards Utterance) but also be able to vary in its output across points of evaluation at the same world (thus predicting ambivalence towards Assessment).

SITUATION SEMANTICS:

$$\llbracket \ulcorner \text{might } p \urcorner \rrbracket^{f,s} = 1 \text{ iff } \exists w \in f(s): \llbracket p \rrbracket^{f,w} = 1$$

C-CONTENT:

The content of $\ulcorner \text{might } p \urcorner$ as uttered in c is $\{s : \llbracket \ulcorner \text{might } p \urcorner \rrbracket^{c,f_c,s} = 1\}$.

- The latter is not forced on us: we could instead adopt a view on which the domain-fixing function comprises the content and the situation is initialized by the context of utterance. This would be a kind of expressivism.

CONTEXTUALIST TRUTH

- The proposition expressed by $\ulcorner \phi \text{ is true} \urcorner$ as uttered in c is necessarily equivalent to the proposition that the proposition ϕ refers to at s_c is true at s_c .
- The proposition expressed by $\ulcorner \phi \text{ is false} \urcorner$ as uttered in c is necessarily equivalent to the proposition that the proposition ϕ refers to at s_c is false at s_c .

$$\llbracket \ulcorner \text{What } Z \text{ said is true} \urcorner \rrbracket^c = \{s : s_c \in \llbracket \ulcorner \text{What } Z \text{ said} \urcorner \rrbracket^{c,f_c,s_c}\}.$$

§5 Predicting the results

Suppose there are (at least) two kinds of domain-fixing functions:

SITUATION VARIANT

For any s , $f^*(s) = \{w : w \text{ is compatible with the evidence available in } s\}$.

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For some epistemic agent N and situation s : $f_{N_t}(s) = \{w : w \text{ is compatible with what } N \text{ knows at } t \text{ at } w_s\}$.

- In **Conflicting Utterances**, either $f_{c_A} = f_{c_B}$ or $f_{c_A} \neq f_{c_B}$. If they are the same, then A and B's claims are incompatible. If they differ, then A and B's claims are compatible.
- In **Conflicting Assessments**, either f_{c_C} is knower oriented or situation variant. If it is knower-oriented then A and B's assessments are incompatible. If it is situation variant and A and B have different evidence, then A and B's assessments are compatible.