

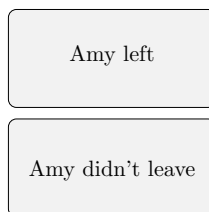
Assertions, polar questions, and the land in between

Division of labor between semantics and discourse pragmatics*

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- This talk is about the semantics and pragmatics of assertions, polar questions, and other discourse moves that **induce a choice between two complementary alternatives**.¹
- We call such discourse moves **polar initiatives**.
- We focus on four cases, involving the following types of sentences:

(1)	Amy left.	[falling declarative]
(2)	Amy left?	[rising declarative]
(3)	Did Amy leave?	[polar interrogative]
(4)	Amy left, didn't she?	[tag interrogative]
- All these induce a choice between two complementary alternatives:



*This handout is based on Farkas and Roelofsen (2012). We will focus on the part of the paper that is about polar initiatives. The paper is also concerned with responses to such initiatives, in particular those involving polarity particles (e.g., *yes* and *no*), but those are left out of consideration here.

¹We call two alternatives **complementary** iff they are mutually exclusive and together cover the entire logical space.

- Terminology:

Sentence type	Discourse move
Falling declarative	Assertion
Rising declarative	Tentative assertion
Polar interrogative	Polar question
Tag interrogative	Tag question

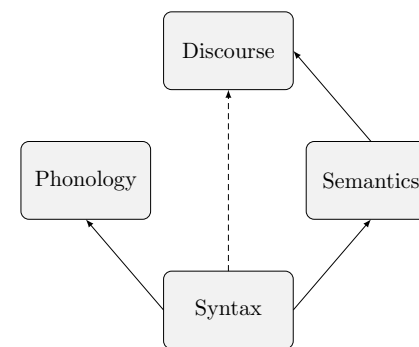
- Main difference in discourse effects:

assertions ----- tentative assertions / tag questions ----- polar questions
 ↔ commit to one alternative ↔ biased, but no full commitment ↔ neutral

- General issues to be addressed:

- How to account for the similarities and differences between different types of initiatives?
- How to **divide the labor** between the components of the theory in a principled way?

Assumed high-level architecture:



- The **syntactic component** determines the range of well-formed syntactic structures
- The **phonological component** specifies how each syntactic structure is spelled out
- The **semantic component** associates every syntactic structure with a semantic value, in a compositional way
- The **discourse component** specifies how an utterance of a sentence affects the discourse context, given the semantic value of the uttered sentence and (sometimes) its syntactic form
- Our main concern: division of labor between the **semantic** and the **discourse** component

Basic theoretical desiderata:

- Avoid a stipulative case-by-case treatment of the different types of polar initiatives
- The different types of initiatives should be treated as **uniformly** as possible
- In particular:
 - The semantic component should assign a **semantic value** to all types of polar initiatives in a uniform way
 - The discourse component should specify the **discourse effects** of the different types of polar initiatives as uniformly as possible
 - * The **default** discourse effect of an utterance should be **determined completely and uniformly by the semantic value** of the uttered sentence
 - * The effect of an utterance can only be taken to **diverge** from this default effect, if the uttered sentence has a **specialy marked syntactic form**

Marked and unmarked forms:

- Among falling and rising declaratives, we assume that:
 - **falling** declaratives are **unmarked**
 - **rising** declaratives are **marked**

Motivation: declaratives are more frequently pronounced with falling intonation²

- Among polar and tag interrogatives, we assume that:
 - **polar** interrogatives are **unmarked**
 - **tag** interrogatives are **marked**

Motivation: tag interrogatives are more complex in form

Default and non-default initiatives:

- **Default initiatives:** initiatives that involve **unmarked** sentence types
- **Non-default initiatives:** initiatives that involve **marked** sentence types

Default	Non-default
Assertions	Tentative assertions
Polar questions	Tag questions

- Since **default** initiatives involve unmarked sentence types, their discourse effects should be determined **completely** and **uniformly** by their semantic value
- However, **marked** sentence types may be taken to signal **non-default** discourse effects

²We don't know of any quantitative studies that corroborate this intuition, references would be much appreciated.

- So the effects of a **non-default** initiative do **not** need to be **determined completely** by the semantic value of the uttered sentence

A concrete example of what we want to avoid:

- Frege (1918) famously assumes that declaratives and polar interrogatives **have the same semantic content** (contain the same 'thought')
- But the discourse effects of assertions and polar questions are clearly different
- Hence, Frege has to stipulate that they **differ in force**
 - “An interrogative sentence and an indicative one contain the same thought; but the indicative contains something else as well, namely, the assertion. The interrogative sentence contains something more too, namely a request. Therefore two things must be distinguished in an indicative sentence: the content, which it has in common with the corresponding sentence-question, and the assertion.”
 - (Frege, 1918, p.294)³
- These assumptions are also prominently adopted in *speech act theory* (e.g., Searle, 1969)
- On these assumptions, the discourse effects of assertions and polar questions are not determined completely by the semantic content of the uttered sentence
- This is something that we want to avoid, if possible
- In Frege's terms, we want to reduce the number of different forces that need to be stipulated
- Ideally, all unmarked forms should be treated uniformly, as having the same default force

Desired division of labor between semantics and discourse component:

- Default initiatives minimize burden on discourse component; maximize burden on semantics
- Non-default initiatives may place a heavier burden on the discourse component

Resulting requirement on the semantic component of the theory:

- In order to comply with the above desiderata, we should be able, at the very least, to give a uniform characterization of the discourse effects of default assertions and polar questions
- To this end, our semantic framework needs to be **richer** than the standard **truth-conditional** framework (otherwise we would certainly not be able to avoid Frege's multiple forces)
- What is needed is a framework in which the meaning of a sentence embodies both its **informative** and its **inquisitive** content in a uniform way
- For this reason we adopt the framework of **inquisitive semantics**⁴

³The page reference is to the translated version, Frege (1956).

⁴See, among others, Groenendijk and Roelofsen (2009); Ciardelli (2009); Ciardelli and Roelofsen (2011); AnderBois (2011); Ciardelli *et al.* (2012, 2013); Roelofsen (2013). The framework builds on earlier work in *alternative semantics* (Hamblin, 1973; Karttunen, 1977; Kratzer and Shimoyama, 2002; Alonso-Ovalle, 2006, among many others), but gives a crucial new twist to the central notion of meaning. For discussion, see Ciardelli *et al.* (2013); Roelofsen (2013).

- If this framework indeed allows us to characterize the discourse effects of all default polar initiatives in a uniform way, this constitutes an important advantage over other frameworks

Roadmap:

- §1: default assertions and polar questions
- §2: non-default cases
- §3: summary and conclusion

1 Default assertions and polar questions

1.1 Semantic framework

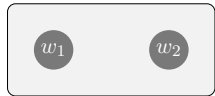
- Main feature of inquisitive semantics: the proposition expressed by a sentence captures both its **informative content** and its **inquisitive content**

Basic notions:

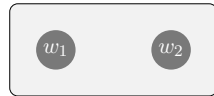
- **Possibility**: set of possible worlds
- **Proposition**: set of possibilities, non-empty and downward closed
- A set of possibilities A is **downward closed** just in case:
 - whenever A contains a possibility α , it also contains every possibility $\beta \subseteq \alpha$
- For any set of possibilities A , we use A^\downarrow to denote the downward closure of A :
 - $A^\downarrow := \{\beta \mid \beta \subseteq \alpha \text{ for some } \alpha \in A\}$
- The proposition expressed by a clause φ is denoted as $\llbracket \varphi \rrbracket$
- The **maximal elements** of $\llbracket \varphi \rrbracket$ are called the **alternatives** in $\llbracket \varphi \rrbracket$
- Two simple examples, depicted below:

$$(5) \quad \llbracket \text{Amy left} \rrbracket = \{\{w : \text{Amy left in } w\}\}^\downarrow$$

$$(6) \quad \llbracket \text{Did Amy leave?} \rrbracket = \{\{w : \text{Amy left in } w\}, \{w : \text{Amy didn't leave in } w\}\}^\downarrow$$



(a) $\llbracket \text{Amy left} \rrbracket$



(b) $\llbracket \text{Did Amy leave?} \rrbracket$

- In this figure:
 - w_1 and w_2 are worlds where Amy left
 - w_3 and w_4 are worlds where Amy did not leave
 - we only depict the alternatives

The default effect of an utterance:

(to be made more precise below)

- In uttering a sentence φ , a speaker:
 1. Provides the information that the actual world is located in at least one of the possibilities in $\llbracket \varphi \rrbracket$, i.e., in $\bigcup \llbracket \varphi \rrbracket$
 2. Steers the conversation towards a state in which, for some $\alpha \in \llbracket \varphi \rrbracket$, the participants commonly agree that the actual world is located in α
- We refer to $\bigcup \llbracket \varphi \rrbracket$ as the **informative content** of φ , notation $\text{info}(\varphi)$

Informative and inquisitive sentences:

- A sentence is **informative** iff it excludes at least one candidate for the actual world:
 - φ is informative iff $\text{info}(\varphi) \neq W$ (where W is the set of all possible worlds)
- A sentence φ is **inquisitive** iff in order to reach a state in which all participants commonly agree that the actual world is located in a specific possibility in $\llbracket \varphi \rrbracket$, it is not sufficient for the participants to simply accept $\text{info}(\varphi)$
 - φ is inquisitive iff $\text{info}(\varphi) \notin \llbracket \varphi \rrbracket$
- This means that additional information needs to be provided

Inquisitiveness and alternatives:

- Given a picture of $\llbracket \varphi \rrbracket$, it is easy to see whether φ is inquisitive
- This is because, whenever W is finite:
 - φ is **inquisitive** iff $\llbracket \varphi \rrbracket$ contains at least **two alternatives**
- For example:
 - (5) is informative but not inquisitive (there is just one alternative)
 - (6) is not informative but it is inquisitive (there are two alternatives)

1.2 Syntax and semantics of declaratives and interrogatives

- Syntactically, we assume that each clause comes with a certain **clause type marker**
- These clause type markers affect both spell-out and semantic interpretation

Syntactic representation	Spell out
$[\text{DEC}_F \text{ Amy PAST leave}]$	Amy left.
$[\text{INT}_P \text{ Amy PAST leave}]$	Did Amy leave?
$[\text{DEC}_R \text{ Amy PAST leave}]$	Amy left?
$[\text{INT}_T \text{ Amy PAST leave}]$	Amy left, didn't she?

- The **semantic contribution** of the clause type markers is very simple
- Since $\text{DEC}_F/\text{DEC}_R$ and $\text{INT}_P/\text{INT}_T$ have exactly the same semantics we suppress the subscripts:

$$[\text{DEC } \varphi] := \{\bigcup[\varphi]\}^\downarrow$$

$$[\text{INT } \varphi] := \{\bigcup[\varphi], \overline{\bigcup[\varphi]}\}^\downarrow$$

- Some examples:

$$(7) \quad [\text{DEC Amy PAST leave}] = \{\{w : \text{Amy left in } w\}\}^\downarrow$$

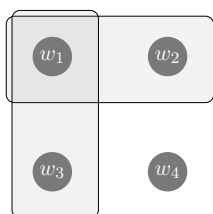
$$(8) \quad [\text{INT Amy PAST leave}] = \{\{w : \text{Amy left in } w\}, \{w : \text{Amy didn't leave in } w\}\}^\downarrow$$

- Examples involving **disjunction**, which introduces multiple alternatives:

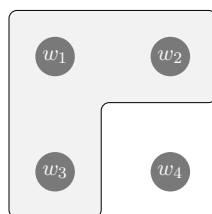
$$(9) \quad [\text{Amy or Bill left}] = \{\{w : a \text{ left in } w\}, \{w : b \text{ left in } w\}\}^\downarrow$$

$$(10) \quad [\text{DEC Amy or Bill left}] = \{\{w : a \text{ or } b \text{ left in } w\}\}^\downarrow$$

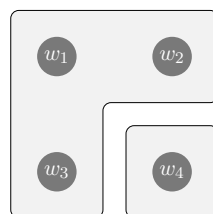
$$(11) \quad [\text{INT Amy or Bill left}] = \{\{w : a \text{ or } b \text{ left in } w\}, \{w : \text{neither } a \text{ nor } b \text{ left in } w\}\}^\downarrow$$



(c) [Amy or Bill left]



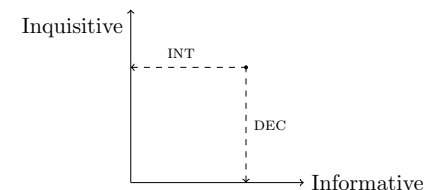
(d) [DEC Amy or Bill left]



(e) [INT Amy or Bill left]

Clause type markers as projection operators

- Notice that for any φ :
 - $[\text{DEC } \varphi]$ is non-inquisitive, that is, **purely informative** (if not tautological)
 - $[\text{INT } \varphi]$ is non-informative, that is, **purely inquisitive** (if not tautological)
- In inquisitive semantics, propositions can be thought of as inhabiting a two-dimensional space
- The DEC and INT operators can then be seen as **projection operators**, mapping every proposition $[\varphi]$ to a purely inquisitive or a purely informative proposition:



- General idea: the common function of declarative and interrogative clause type markers across languages is to express such projection operators (cf. Roelofsen, 2013)

1.3 The discourse component

Discourse contexts:

To capture the most basic discourse effects of default polar initiatives, discourse contexts must be modeled as involving, minimally, the following two elements:⁵

1. A list of **discourse commitments** DC_X for each conversational participant X .
 - Each discourse commitment $\alpha \in DC_X$ is a set of possible worlds
 - X presents herself as taking w_a to be contained in each $\alpha \in DC_X$
2. A stack of **proposals** that have been made in the conversation so far to extend the participants' discourse commitments.
 - We refer to this stack as the **Table**.
 - If a certain proposal is made—placed on the Table—the conversation is steered toward a state where the proposal is settled.

⁵See Farkas and Bruce (2010), which in turn builds on a rich tradition of previous work on discourse (Hamblin, 1971; Stalnaker, 1978; Carlson, 1983; Clark, 1992; Ginzburg, 1996; Roberts, 1996; Gunlogson, 2001; Asher and Lascarides, 2003; Büring, 2003, among others).

The contextual effect of default polar initiatives:

When a participant X utters a sentence φ , then by default (unless explicitly signaled otherwise) the discourse context is affected as follows:

1. The informative content of φ , $\cup[\varphi]$, is added to DC_X .
2. The proposition expressed by φ , $[\varphi]$, is put onto the Table.

Differences between declaratives and polar interrogatives:

- The proposition expressed by a declarative always contains a single alternative, which typically does not cover the entire logical space (unless the declarative is tautological)
- The proposition expressed by a polar interrogative typically contains two alternatives (unless the interrogative is tautological), which together always cover the entire logical space
- As a result:
 - default assertions commit the speaker to a typically non-trivial alternative and steer the conversation towards a state where the other participants commit to it as well
 - default polar questions involve trivial speaker commitment, and steer the conversation towards agreement on one of the two alternatives

Result achieved so far:

- The semantics of declaratives and polar interrogatives completely determines the way they affect the discourse context in the default case
- The differences in contextual effect between default assertions and polar questions follow uniformly from differences in their semantics
- In Frege’s terms, we have reduced the number of different forces that need to be stipulated, and shown, indeed, that both unmarked sentence types, falling declaratives and polar interrogatives, can be treated uniformly, as having one and the same default force

Possible objection:

- We avoided the stipulation of multiple forces, i.e., simplified the discourse component, but at the cost of making the **semantics more complex**
- Response:
 - The richer semantic framework that we adopted can be **motivated independently**
 - For instance, it is needed to characterize the semantics of **embedded interrogatives**
 - Consider:
 - (12) Bill knows that Amy left.
 - (13) Bill knows whether Amy left.

- The two sentences clearly differ in content
- Assuming that the semantic content of a sentence is derived compositionally, this difference must be due to a semantic difference between the two embedded clauses
- This is easily and naturally captured in a semantic framework where the notion of meaning encompasses both informative and inquisitive content, but cannot be captured in a framework where meaning is identified with informative content only
- So taking inquisitive content into account is motivated independently
- As far as we can tell, stipulating multiple forces for default polar initiatives does not have such independent motivation
- The apparent need to do so only arises under a narrow conception of semantic meaning as informative content

2 Non-default initiatives

2.1 Preview

Default cases:

- Default assertions: the speaker fully commits to one alternative
- Default polar questions: the speaker presents herself as being epistemically neutral relative to the two alternatives

Non-default cases:

- Non-default assertions: weaken the commitment associated with default assertions
- Non-default polar questions: renounce the neutrality of default polar questions

Empirical focus:

- Tag interrogatives:⁶

(14) Suzanna is joining us, isn’t she?

- Rising declaratives:

(15) Suzanna is joining us?

⁶We only consider tag interrogatives where the tag reverses the polarity of the anchor. Tag interrogatives where the tag does not reverse the polarity of the anchor, e.g., *Suzanna is joining us, is she?*, are known to behave differently in subtle ways. We further abstract away from differences in intonation, which are also known to sometimes result in subtle differences in interpretation. In both cases, the general nature of the observed differences is not very well-understood (see Ladd, 1981; Beyssade and Marandin, 2006; Reese and Asher, 2007; Malamud and Stephenson, 2011, among others, for discussion).

Basic empirical contrasts to account for, four ice cream scenarios:

Context 1: Addressee eating neutrally, Speaker watching

- Addressee is eating ice cream, with a neutral facial expression
- Speaker is watching, has never tasted the ice cream before

- (16) a. # It's tasty.
 b. Is it tasty?
 c. # It's tasty, isn't it?
 d. # It's tasty?

Context 2: Speaker eating, Addressee watching

- Speaker is eating ice cream
- Addressee is watching, has never tasted the ice cream before

- (17) a. It's tasty.
 b. # Is it tasty?
 c. # It's tasty, isn't it?
 d. # It's tasty?

Context 3: Speaker and Addressee both eating

- Speaker and Addressee are eating ice cream from the same container

- (18) a. It's tasty.
 b. # Is it tasty?
 c. It's tasty, isn't it?
 d. # It's tasty?

Context 4: Addressee eating with gusto, Speaker watching

- Addressee is eating ice cream with gusto
- Speaker is watching, has never tasted the ice cream before

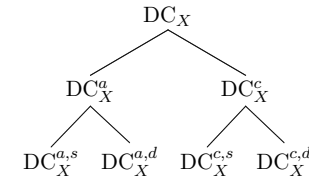
- (19) a. # It's tasty.
 b. Is it tasty?
 c. # It's tasty, isn't it?
 d. It's tasty?

Main theoretical distinctions that we will draw:⁷

- Commitment as **source** vs. commitment as **dependent**
 - commitment as *source* is based on evidence the Speaker has independently of immediately preceding commitments made by other participants
 - commitment as *dependent* is based on an interlocutor's prior commitment as *source*; signals lack of independent evidence
- **Actual** commitment vs. **conditional** commitment
 - actual commitment: default case
 - conditional commitment: commitment that becomes actual only under the condition that another participant commits as well in the future

Refined representations of discourse contexts:

- DC_X : structured into actual (DC_X^a) and conditional commitments (DC_X^c)
- Each of these, further divided into:
 - commitments with X as *source* ($DC_X^{a,s}$ and $DC_X^{c,s}$)
 - commitments with X as *dependent* ($DC_X^{a,d}$ and $DC_X^{c,d}$)



2.2 Sources and dependents

Puzzle from Gunlogson (2008):

- (20) A: Stuart is in town.
 B: Yes, I saw him yesterday. / #Yes, I had no idea.
- (21) A: Stuart is not in town.
 B: No, he is on a holiday. / #No, I had no idea.

Main idea in Gunlogson (2008): when committing to a certain possibility α , a speaker X may signal the nature of the evidence that she has for making that commitment.

⁷Elaborating on Gunlogson (2008) and Malamud and Stephenson (2011).

- X is *source* for α if she has evidence for α that is independent of her interlocutor's commitment to α in the current conversation.
- X is *dependent* relative to α if her commitment to α is based on an interlocutor's prior commitment to α .

In the case of a default assertion:

- Speaker presents herself as source for her commitment
- Addressee may present herself as co-source or as dependent

Reactions flanked by *yes* and *no* register the responder as source; *aha/oh* register the responder as dependent, in which case some other participant must be source.

- (22) A: Stuart is in town.
 B: Aha / Oh, I had no idea.
 #Aha / #Oh, I knew that already.

- Default case: addition to actual commitment list as source—addition to $DC_X^{a,s}$
- Non-default case: addition to actual commitment list as dependent—addition to $DC_X^{a,d}$ (as signaled for instance by *aha, oh*)

Correct predictions:

- *aha/oh* cannot be used as answers to polar questions

- (23) A: Is Susan coming to the movies with us?
 B: Yes. / #Aha. / #Oh.

- *oh/aha*, unlike *yes*, can be used to signal acceptance of an answer to an information seeking question

- (24) A: Does Frank have any kids?
 B: He has a son and a daughter.
 A: Aha/Oh. / #Yes.

- *yes* can be used to signal acceptance of an answer to a quiz question; *oh/aha* cannot:

- (25) A: So, Johnny, what's the capital of California?
 J: Sacramento.
 A: Yes, you're right. / #Aha. Let's go on now to a more difficult one.

2.3 Conditional commitments

- A participant X's commitment to a possibility α is conditional if she expresses willingness to commit to α under the condition that one of her interlocutors commits to α as well.

If a speaker commits conditionally to α :

- The addressee should be a possible future source for α

- The speaker can be either source or dependent relative to α
 - If source, the speaker is ready to commit to α as source once the addressee ratifies it.
 - If dependent, the speaker is ready to commit to α as dependent if the addressee commits to it as source.
- In either case, a conditional commitment is weaker than an actual commitment.

Introducing conditional commitments rather than actual ones is done via marked discourse moves.

2.4 Tag questions

- (26) Suzanna is joining us, isn't she?

Terminology:

- The initial declarative clause: the *anchor*
- The adjoined interrogative clause: the *tag*
- The unique alternative in the proposition expressed by the anchor: the *anchor alternative*

Hybrid nature:

- Similar to assertions, in that the Speaker is biased towards the anchor, and presents herself as having some independent evidence to support this bias, but there is no full commitment
- Similar to questions, in that the Addressee is normally supposed to respond

The discourse effect of a tag question:

An utterance of a tag interrogative with anchor alternative α by a participant X has the following effects on the discourse context:

1. The proposition $\{\alpha, \bar{\alpha}\}^\downarrow$ is placed on the Table
2. X conditionally commits to α as source: α is added to $DC_X^{c,s}$

Note: the fact that tag questions involve conditional commitments fits their non-default nature

Resulting contextual requirements:

- Addressee should be in a position to source either α or $\bar{\alpha}$
- Speaker should have some independent evidence for α , because she presents herself as conditional source

2.5 Tentative assertions

Extensively discussed by Gunlogson (2001, 2008).

- (27) Suzanna is joining us?

Hybrid nature:

- Similar to assertions, in that some type of bias towards α is expressed, but independent evidence is not necessary
- Similar to questions, in that a response is elicited from the Addressee

The discourse effect of a tentative assertion

An utterance of a rising declarative expressing the proposition $\{\alpha\}^\downarrow$ by a participant X has the following effects on the discourse context:

1. The proposition $\{\alpha\}^\downarrow$ is placed on the Table
2. X conditionally commits to α as dependent: α is added to $DC_X^{c,d}$

Resulting contextual requirements:

- Addressee should be in a position to source either α or $\bar{\alpha}$
- Speaker should not be in a position to source α , because she presents herself as dependent
- There should be a reason for the Speaker to conditionally commit to α as dependent rather than simply asking a default polar question and thereby remain more neutral
- One reason could be that it is more likely in the given context that the Addressee will commit to α than to $\bar{\alpha}$

2.6 Testing the account

Let's return to our four ice cream scenarios.

Context 1: Addressee eating neutrally, Speaker watching

- Addressee is eating ice cream, with a neutral facial expression
- Speaker is watching, has never tasted the ice cream before

- (28)
- a. # It's tasty.
 - b. Is it tasty?
 - c. # It's tasty, isn't it?
 - d. # It's tasty?

- Explanation:
 - The assertion and the tag question are bad, because they present the Speaker as (conditional) *source* for α , which is inappropriate in the given context
 - The tentative assertion is bad because there is no good reason for the Speaker to conditionally commit to α as dependent, rather than simply asking a default polar question and thereby remain more neutral

Context 2: Speaker eating, Addressee watching

- Speaker is eating ice cream
- Addressee is watching, has never tasted the ice cream before

- (29)
- a. It's tasty.
 - b. # Is it tasty?
 - c. # It's tasty, isn't it?
 - d. # It's tasty?

- Explanation:
 - The polar question, tag question, and tentative assertion are all bad because they require the Addressee to be a possible source for α , which is impossible in the given context.

Context 3: Speaker and Addressee both eating

- Speaker and Addressee are eating ice cream from the same container

- (30)
- a. It's tasty.
 - b. # Is it tasty?
 - c. It's tasty, isn't it?
 - d. # It's tasty?

- Explanation:
 - The polar question is bad because it presents the Speaker as being neutral, and the tentative assertion is bad because it presents the Speaker as not having independent evidence, which is inappropriate in the given context.
 - The assertion and tag question are fine because they present the Speaker as (conditional) source for one of the alternatives.
 - The tag question, unlike the assertion, elicits an explicit response from the Addressee that ratifies the Speaker's conditional commitment.

Context 4: Addressee eating with gusto, Speaker watching

- Addressee is eating ice cream with gusto
- Speaker is watching, has never tasted the ice cream before

- (31)
- a. # It's tasty.
 - b. Is it tasty?
 - c. # It's tasty, isn't it?
 - d. It's tasty?

- Explanation:
 - The assertion and tag question are bad because they present the Speaker as (conditional) source for α .

- The tentative assertion is fine, because the Speaker lacks independent evidence for α , but at the same time there is good reason to expect that the Addressee will commit to α rather than to $\bar{\alpha}$

Additional prediction:

- *yes* or *no* can be used in response to tag questions and tentative assertions, but not *oh/aha*.

3 Conclusion

Aims:

- balance the semantic and discourse facets of the analysis of various types of declaratives and polar interrogatives in such a way as to separate default cases from more complex ones
- account for all the default cases in a uniform way
- extend the account to non-default cases

Results:

- Commonalities across all the cases we considered:
 - semantic core: all sentence-types express the same kind of propositions
 - uttering a sentence φ raises the issue of locating the actual world within one of the possibilities in $\llbracket\varphi\rrbracket$
 - moreover, it commits the Speaker (conditionally or unconditionally) to the informative content of the sentence: w_a must be located in $\bigcup\llbracket\varphi\rrbracket$
- Differences:
 - single alternative vs. multiple alternatives
 - trivial vs. non-trivial commitment
 - actual vs. conditional commitment
 - commitment as source or as dependent

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