Speech Acts:
Dynamic Force and Conversational Update
Lecture 2: Assertion

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The Basic Stalnakerian Account

Inquiry

As we saw in the previous lecture, there are a variety of different Austinian speech acts that fall under the umbrella of the declarative clause type.

We can report, suggest, aver, and so forth. And we can also use declaratives in suppositional and counterfactual contexts.

Strictly speaking, Stalnaker's theory is developed to model a specific kind of conversational exchange he calls inquiry.

But the framework has been generalized to cover basically all speech acts performed using declaratives.

Inquiry

What is inquiry? We can focus on three features:

- Actual. Inquiry focuses on exchanging information about the actual world.
- Cooperative. In inquiry, interlocutors engage in a joint conversational project.
- Literal. In inquiry, interlocutors speak non-figuratively.

Refresher: Context

The context of a conversation c at a world w is the shared information state of c's interlocutors at w.

We model it as a set of worlds CS_w^c — the set of worlds compatible with everything commonly accepted for the purposes of c in w.

The Essential Effect

Suppose that at w, c is a conversation between two interlocutors, Ada and Beth.

Then, if we consider some arbitrary time t_i between conversational contributions in c, CS^c_w at t_i is the set of worlds compatible with everything Ada and Beth commonly accept for the purposes of c in w at t_i. (i is for *initial*.)

Now suppose Ada asserts by uttering the sentence 'Lithium is not a gas'.

The Essential Effect

The BS account holds that Ada's assertoric utterance puts forward a possible worlds proposition, the content of her assertion. Call this content p.

On the BS account, Ada's assertion is a proposal to update CS^c_w with p.

If the proposal is not rejected, CS^c_w is updated with p intersectively: the post-update common ground is $CS^c_w \cap p$. More precisely, if t_f is the time after updating on Ada's assertion, CS^c_w at t_f = $[CS^c_w$ at $t_i] \cap p$. (f is for *final*.)

The rule that tells us how to update CS^c_w with p (i.e. the intersection rule) is called the essential dynamic effect of assertion.

On the BS account, then, to assert a proposition p is to propose to update the context via the essential dynamic effect of assertion.

Manifest Update

Actually, the preceding story is too simple. If we consider the difference between the pre-assertion CS^c_w at t_i and the post-update CS^c_w at t_f, more has been added than just the proposition p (that lithium is not a gas).

For example, CS^c_w at t_f contains the information that Ada asserted, that she uttered the lexical item 'lithium', that she believes that lithium is not a gas, and so forth.

These propositions are not entailed by p, so their presence in CS^c_w at t_f cannot be explained by intersecting CS^c_w at t_i with p.

Manifest Update

Instead, the presence of extra content in the context after an assertion is explained on the BS account by appealing to an update on the manifest event of the utterance.

This requires considering another point of time during the processing of Ada's assertion: t_m. (m is for *manifest*).

t_m comes after t_i but before t_f. At t_m, all the information communicated by the publicly observable event of Ada asserting is common ground, but Beth has not decided whether to accept or reject Ada's assertion, so the context has not been updated with its essential dynamic effect.

Worked Example

Ada and Beth are having a conversation at t_i. Ada assertorically utters the sentence 'Lithium is not a gas'. Here is what happens:

First, the manifest event of Ada's speech act makes many different pieces of information obvious to both Ada and Beth. Let the conjunction (intersection) of these pieces of information be r.

After manifest update we have: CS_w^c at $t_m = [CS_w^c \text{ at } t_i] \cap r$.

Now Beth can choose to either accept or reject Ada's assertion.

If she accepts, then CS_w^c at $t_f = [CS_w^c \text{ at } t_m] \cap p$.

If she rejects, then CS_w^c at $t_f = CS_w^c$ at t_m.

Presupposition

Problem: Presupposition

Now suppose Ada asserts the sentence ‘Clara stopped publishing on assertion’. This sentence communicates two propositions:

1. Clara does not currently publish on assertion.
2. Clara published on assertion in the past.

But Ada’s speech act is not equivalent to simply asserting the conjunction of (1) and (2).

In particular, the truth of (2) seems to be a precondition for Ada’s assertion to have a truth value at all.

We say that ‘Clara stopped publishing on assertion’ presupposes (2).

Problem: Presupposition

How can we handle presuppositional content within the BS account?

The idea here is that the presupposed content of a sentence must already be in the common ground for an utterance of that sentence to be felicitous.

So it is felicitous for Ada to assert 'Clara stopped publishing on assertion' only if it is already common ground between Ada and Beth that Clara published on assertion in the past.

When this condition is not satisfied, conversation is disrupted ("Hey, wait a minute!") and repair strategies are required.

For example, imagine someone saying, 'The Duke of New Jersey is getting another marriage annulled.'

Accommodation

Actually, the idea that presupposed content must already be common ground is too simple. Sometimes a speaker can use a sentence with a presupposition in order to communicate the presupposed content for the first time.

For example, even if Beth does not already know that Clara has an eccentric uncle, it can be acceptable for Ada to assert 'Clara's eccentric uncle bought a sloop.'

The phenomenon whereby audience members take on presupposed information even though it is not in the common ground prior to an assertion is called accommodation.

Accommodation

So, how do we model presupposition and accommodation within the BS framework?

One option: for a given assertion with at-issue content p and presupposed content q, we can stipulate that the essential dynamic effect of assertion is defined only if the context entails q; if it does not, the conversation crashes and repair is required ("Hey, wait a minute!").

At t_m, CS_w^c will contain the information that a sentence presupposing q was asserted.

If q is not already in CS_w^c at t_m, then between t_m and t_f, audience members must decide (i) whether to accommodate by presupposing q, and (ii) if they accommodate, whether to accept or reject p.

Accommodation

Alternatively, we could separate out the process of accommodation from the process of accepting or rejecting an assertion.

On this picture, we would posit a fourth time-point in the interpretive process, t_a, coming after t_m but before t_f. (*a* is for *accommodation*.)

Accommodation

Suppose Ada assertorically utters the sentence 'Clara stopped publishing on assertion'. Here is what happens, on this second picture:

First, the manifest event of Ada's speech act makes many different pieces of information obvious to both Ada and Beth. Let the conjunction (intersection) of these pieces of information be r.

After manifest update we have: CS_w^c at $t_m = [CS_w^c \text{ at } t_i] \cap r$.

r will entail that Ada has assertorically uttered a sentence with at-issue content p and presupposed content q.

Now we check whether CS_w^c at t_m entails q. If it does, we proceed to the next step. If it does not, Beth can choose to either accommodate by presupposing q or reject Ada's assertion, causing conversational crash.

If crash does not occur, we arrive at t_a. CS_w^c at $t_a = [CS_w^c \text{ at } t_m] \cap q$.

Finally, Beth decides whether to accept or reject the at-issue content.

Assertoric Content and Semantic Content

Assertoric Content and Semantic Content

So far, we have simply assumed that the content of an assertion is a proposition.

This assumption is not innocent, however. Compositional semantic theories do not typically assign sentences propositional contents (functions from worlds to truth values).

Instead, contents are generally relativized to indices containing multiple parameters. The introduction of indices is important for explaining how operators work.

So in order to make the BS account consistent with our semantic theories, we need a way to recover a proposition from the semantic value of sentence.

Assertoric Content and Semantic Content

To clarify, what we are interested in is a way to construct a function from the semantic values of sentences on occasions of use to propositions. Sentences are used in Kaplanian contexts, so we can appeal to the context in which a sentence is uttered to help us construct the function.

Note! Kaplanian contexts (which determine what context-sensitive lexical items denote on a particular occasion of use) are theoretically quite different from the conversational context as Stalnaker understands it.

As we will see, there are multiple ways one could in principle recover propositions from sentences. But one stands out as the most natural.

The Horizontal

Let us use the term grammar for any function from ordered n-tuples of a sentence, a Kaplanian context, a world, and a sequence of further index parameters to a truth value.

In a simple semantics with tense-shifting operators, for example, our indices will be world/time pairs, and a grammar will be a function from sentence/context/world/time 4-tuples to truth values.

For any Kaplanian context c, we can define the index of c (i_c) by using features of c to set the parameters in i_c.

For example, in our simple semantics with world/time indices, if a sentence is uttered at 9 am in world w, then the index of of the context in which it is uttered is $\langle w, 9\ am \rangle$.

The Horizontal

The idea of the index of a context allows us to state the most natural recipe for recovering a proposition from the semantic value of a sentence as used in a context: use the index of the context in which it is uttered to fill in everything but the world parameter.

This is called the horizontal proposition of the utterance.

Formally, for a sentence s uttered in context c and a grammar G, we construct the horizontal in two steps.

First, we note that we get a truth-value by taking $G(s,c,i_c)$. This is the truth value of the sentence as uttered in the context and evaluated at the index of the context.

Then we recover a proposition by abstracting over the world parameter in the index: $\lambda w.G(s, c, i_c)$. This is the horizontal proposition of the utterance.

Diagonalization

Problem: Necessary Horizontals

It would be appealing to hold that speakers always assert the horizontal proposition of their utterances. In other work, I have called this view Horizontalism.

However, Horizontalism faces a serious problem, which has led Stalnaker to reject it.

The problem is that many utterances appear to be informative even though their horizontal propositions are either necessary or contradictory.

To use an example from Stalnaker, if we hear a woman speaking in the next room, I might say: 'That is either Zsa Zsa Gabor or Elizabeth Anscombe.'

Problem: Necessary Horizontals

There are only two option for the horizontal proposition of my utterance. Either the person in the room is one of the two women, and the horizontal proposition is necessarily true (because it says that she is identical to herself), or the person in the room is not one of the two women, and the horizontal proposition is necessarily false.

Either way, the horizontal is uninformative.

But intuitively, the utterance is informative. How can we account for this observation?

Solution: Diagonalize

The BS account's solution here is to move away from the idea that the assertoric content of an utterance is always its horizontal proposition.

In order to do this, we must come up with an alternative way to associate utterances with propositions.

Stalnaker suggests diagonalization.

Solution: Diagonalize

The truth of an utterance depends on facts about the world in two ways.

First, facts about the world fix facts about the context in which the utterance is produced, which determine the horizontal proposition it expresses.

Second, facts about the world determine whether this horizontal proposition is true.

We can represent how the truth of an utterance depends on these two factors using a propositional concept.

Solution: Diagonalize

Consider an assertoric utterance (call it u) of a simple subject–predicate sentence containing a deictic pronoun: 'She speaks Farsi'.

We can generate a matrix from u by creating one row and one column corresponding to each possible world which contains u and, for each ordered pair $\langle w, w' \rangle$ of such worlds, writing 'T' in the location where row w meets column w' if the assertoric content of u as uttered in w is true at w' and 'F' otherwise.

Suppose for simplicity that there are only four possible worlds. The speaker is demonstrating either Smith or Jones, and exactly one of the two speaks Farsi (but we make no assumption about which). In worlds a and b, the speaker is demonstrating Smith; in worlds c and d, she is demonstrating Jones. In worlds a and c, Smith but not Jones speaks Farsi; in worlds b and d, Jones but not Smith speaks Farsi.

Solution: Diagonalize

Then the propositional concept of u is $\mathfrak{A}$:

$\mathfrak{A}$	a	b	c	d
a	T	F	T	F
b	T	F	T	F
c	F	T	F	T
d	F	T	F	T

(a: Speaker demonstrates Smith; Smith speaks Farsi; b: Speaker demonstrates Smith; Jones speaks Farsi; c: Speaker demonstrates Jones; Smith speaks Farsi; d: Speaker demonstrates Jones; Jones speaks Farsi.)

Along each row, we have the horizontal proposition expressed by u at the corresponding world.

Along each column, we have the truth values of the various possible horizontal propositions expressed by u at the corresponding world.

Solution: Diagonalize

Intuitively, to construct the diagonal proposition of an utterance u, we map each world to the truth-value u would have if both uttered and evaluated in that world.

This corresponds to looking at the entries that fall along the diagonal of its propositional concept.

$\mathfrak{A}$	a	b	c	d
a	**T**	F	T	F
b	T	**F**	T	F
c	F	T	**F**	T
d	F	T	F	**T**

$\mathfrak{B}$	a	b	c	d
a	T	F	F	T
b	T	F	F	T
c	T	F	F	T
d	T	F	F	T

As $\mathfrak{B}$ demonstrates, the diagonal proposition of an utterance does not vary from world to world.

Solution: Diagonalize

Formally, we construct the diagonal proposition by defining the context of an utterance u at a world w (c_{uw}) and the sentence of an utterance u (s_u). Then the diagonal proposition of u is:

$\lambda w.G(s_u, c_{uw}, i_{c_{uw}})$.

Crucially, the diagonal proposition of an utterance that only has uninformative horizontal propositions can be informative.

An utterance of 'That is either Zsa Zsa Gabor or Elizabeth Anscombe' has a necessary horizontal if the woman in the next room is Gabor or Anscombe and a contadictory horizontal otherwise. So its diagonal is the contingent proposition that is true iff the woman in the next room is Gabor or Anscombe.

Solution: Diagonalize

In earlier work, Stalnaker holds that the content of an assertion is its horizontal proposition unless this leads to a problem, in which case the content is its diagonal proposition.

In later work, Stalnaker holds that the content of an assertion is always its diagonal proposition.

Interlude: The BS Account

The BS account of assertion has two main components: it models the state of a conversation as its common ground or context set, and it models the essential effect of assertion as intersection with the context set.

The resulting theory is simple and powerful. It explains how assertions serve the purposes of inquiry by helping interlocutors learn about the world. And it can be extended to explain phenomena like presupposition and the informativeness of apparent semantic tautologies.

But it is not without its problems.

Three Worries

First Worry

In this section, I will briefly present three recent worries for the BS account of assertion.

First, Harris (2020) argues that a public information state is not required to explain communication via assertion.

There are some well-known thought experiments designed to explore what happens when common belief and knowledge are impossible.

For example, imagine that two Roman generals are on opposite sides of a valley containing an enemy army. The generals want to attack the enemy army at the same time, since this will guarantee victory. But the only way they have to communicate is unreliable: they can send a messenger, but he might be intercepted.

In this scenario, it is not possible for either general to know that the other has received and read his message, so it is not possible for the two generals to have common knowledge or justified common belief that they plan to attack at any particular time.

First Worry

Harris points out that the impossibility of forming a shared information state does not preclude communication between the generals.

For example, one general could ask the other for advice about how to manage a cholera outbreak among his troops, and the other could reply with a plan for controlling the outbreak.

Because communication is possible in the absence of a shared information state, Harris argues that it is mistaken to think of the essential effect of assertion as operating on the conversational context.

Second Worry

Lederman (2018) argues that common knowledge and common justified belief are basically impossible to achieve.

His arguments generalize to Stalnaker's attitude of acceptance if we think that interlocutors must have good reasons for accepting that others accept a proposition. Lederman's basic idea is that we are always subject to interpersonal ignorance.

For example, if you and I are looking at the same tree, and the tree looks 30 feet tall to me, there will always be some small x such that, for all I know or believe with justification, the tree looks $30 - x$ feet tall to you.

But then you know that for all I know, the tree looks $30 - x$ feet tall to you. And if the tree looks $30 - x$ feet tall to you, then for all you know, the tree looks $30 - 2x$ feet tall to me.

It follows that we can't have any nontrivial common knowledge or justified belief about the height of the tree.

Third Worry

Goldstein and Kirk-Giannini (2022) show that Stalnaker's intersective update rule is inconsistent with his conception of the conversational context as common acceptance.

The context set of a conversation at a time fails to represent certain structural facts about why a given world is compatible with everything that is commonly accepted.

This means that sometimes accepting an assertion with content p can eliminate more than just the worlds where p is false from the context set, and this is true even after accounting for manifest update.

In general, in order to predict how what is commonly accepted will change when each interlocutor comes to accept p, we need to know more than just what is commonly accepted at t_i or t_m. We need to know about what each individual in the conversation personally accepts.