Conditional Sentences as Conditional Speech Acts

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Take a conditional sentence like **(1)** *If Fred was at the party, the party was fun* (schematically, if φ, then ψ). Standard semantic analyses of conditional clauses in formal semantics assume that they are **conditional propositions** (**CP**) that may be true or false with respect to a world/time or situation index (e.g., Stalnaker, Lewis, Kratzer). For example, Stalnaker (1968) analyzed them as proposition [φ > ψ], which is true at an index i such that the index i′ most similar to i such that φ is true at i is such that ψ is true at i′ as well. Alternatively, (1) may express that the conditional probability P(ψ | φ) is greater than some threshold value (e.g., Adams). However, line of argumentation, mostly in philosophy of language, contends that conditional sentences like (1) express **conditional assertions** (**CA**): Under the condition that φ is true, it is asserted that ψ is true as well (e.g. Edgington, Vanderveken, Starr). Quine (1950) considered CA to be the default theory, and it offers a straightforward explanation of the intuition behind conditionals that were voiced by Charles S. Peirce and Frank Ramsey: To argue for a conditional ‘if φ then ψ’ amounts to adding φ hypothetically to one’s stock of knowledge, and then argue for the truth of ψ.

A strong argument for the CP view is that **conditionals can be embedded**, e.g. by propositional attitude predicates: **(2)** *Sue thinks that if Fred was at the party, the party was fun.* A strong argument for the CA view is that **the embedding options are restricted**; in particular, it is problematic to negate or disjoin them, or to have conditional clause with conditional antecedent. As Stalnaker (2009) put it, “the proponent of a non-truth-conditional [CA] account needs to explain what embeddings there are, but the proponent of a truth-conditional [CP] account must explain why embedded conditionals don’t seem to be interpretable in full generality.” Furthermore, the CP theory has nothing to say about **other conditional speech acts**, like questions **(3)** *If Fred was there, was the party fun?*, imperatives **(4)** *If Fred is there, tell him that he should call me*, or exclamatives **(5)** *If Fred was there, how fun the party must have been!*

One argument in favor of the CP view is that truth-conditional theories for conditionals are worked out in great formal detail, which cannot be claimed for CA theories. In this talk I will take up this challenge and develop a **formal framework for the modeling of the CA view**. I will explain the embeddings of conditional clauses and their restrictions, and I will sketch a unifying account for indicative and counterfactual conditionals in this framework. While I do think that conditional propositions have to be entertained as well, there is clear evidence for conditional assertions and other speech acts that are not reducible to propositions.

I will model conditional assertions with **Commitment Spaces** (CS), as proposed in and Cohen & Krifka (2014) and Krifka (2015). This framework framework starts out with **commitment states** c, sets of propositions that represent the information that the interlocutors assume to be shared at a particular point in conversation. The assertion of a proposition φ by a speaker S_1 consists in adding to c the proposition $S_1 \vdash \varphi$, that S_1 is committed to the truth of φ; in typical circumstances, the proposition φ is added to c as well as a conversational implicature. **Commitment spaces** C are sets of commitment states that represent a commitment state and its possible continuations in the course of conversation. We call √C the set of smallest commitment states of C, the **roots** of C; ideally, a CS has a single non-empty root. Updating C with a proposition φ consists in adding φ to the roots of C, written as $C + F(\varphi) = F(\varphi)(C) = \{c \in C \mid \exists c' \in \surd C[c \cup \{\varphi\} \subseteq c]\}$, in which all commitment states c contain the proposition φ. F(φ) is a CS update function that changes the input CS C to an output CS.

Commitment Spaces are advantageous over mere commitment states, as certain operations over speech acts can be expressed on that level. For example, **denegations** of a commitment update like **(6)** *I don’t claim that the party was fun* can be seen as involving a subtraction; if $\mathfrak{A}$ is a CS update function, then $C + \sim\mathfrak{A} = C - [C + \mathfrak{A}]$. The result is a set of commitment states in which the proposition φ does not occur. Boolean **conjunction** and **disjunction** can be expressed as set intersection and union on CSs: $C + [\mathfrak{A} \& \mathfrak{B}] = [C + \mathfrak{A}] \cap [C + \mathfrak{B}]$ and $C + [\mathfrak{A} \vee \mathfrak{B}] = [C + \mathfrak{A}] \cup [C + \mathfrak{B}]$. Also, **questions** can be modeled as restrictions of a CS to those continuations in which the addressee assert one of a number of proposition.

Conditionals assertions can be modeled as CS updates as follows: 'if φ then assert: ψ' is interpreted as: Whenever the CS develops in such a way that φ is established in a commitment state c, the assertion that ψ is established in c. This effectively removes those commitment states c in C for which $\varphi \in c$ but $\psi \notin c$. We can express this as C + 'if φ, $S \vdash \psi$' = $C + [\sim F(\varphi) \vee F(S \vdash \psi)]$, that is, C will be updated with the disjunction of the denegation $\sim F(\varphi)$ with the consequent $F(S \vdash \varphi)$, that S is committed to φ. This is reminiscent of the predicate logic equivalence $[a \rightarrow b] = \neg a \vee b$.

I will show that the known **problem cases** for embedded speech acts can be resolved. **Disjunction** of conditionals turn out to be problematic because they convey that the antecedents are exhaustive, in which case the sentence expresses a systematic tautology. Cases like **(7)** *Either the cheque will arrive today, if George has put it into the mail, or it will come with him tomorrow, if he hasn't* (Barker 1995) are good because the *if*-clauses are parentheticals. **Negation** of conditionals like **(8)** *It is not the case that if there is no God, everything is permitted* are problematic because they would involve negation of a speech act. I will argue with Punčochář 2015 that they only allow for a negation 'possibly not', which can be expressed on speech acts, and I will explain the observations of Egré & Politzer 2013 concerning negated conditionals. **Conditional antecedents** are bad because the antecedent position is not a speech act; cases like **(8)** *If the glass broke if it was dropped, it was fragile* (Gibbard) are interpretable because there is prosodic evidence that *if (the glass) was dropped* is topic and scopes over the whole sentence. Cases of conjunction of conditionals and conditional consequences, which are easy to interpret, turn out to have a straightforward interpretation. I will also show how **conditional questions** can be interpreted: The commitment space is restricted in such a way that every point in the future development at which the antecedent proposition is added to a commitment space, the continuations of that commitment space are restricted to be answers to that question. For example, (3) states that whenever it becomes established that Fred was at the party, the next move is restricted to assertions whether or not the party was fun.

If conditional clauses are (conditional) speech acts, the question arises why then can be embedded by **propositional attitude** operators as in (2). For conditional assertions, one line of argument is that they undergo a coercion from a speech act $\mathfrak{A}$ to the proposition 'it is assertable that $\mathfrak{A}$'. A speech act is assertable if the current undisputed information allows to make that speech act without expecting fatal challenges. For example, (1) is assertable if it is known that Fred is someone that, when present, makes parties fun. Another line of argument is that beliefs are structures similarly as commitment spaces, namely as a private set of propositions that a subject believes, and a structure of possible enrichments of such believes; to believe in a conditional structure then would mean that whenever one comes to belief the antecedent, one also believes the consequent.

The proposed reconstruction of conditional assertions **makes the consequent assertion dependent on whether the antecedent proposition becomes part of the common ground**, not on whether it is true in the real world. There are clear cases of such conditionals; e.g. John can say **(9)** *If the number 27419 is divisible by 7, I will give you 10 Euros* (in the sense of 'if 27419 turns out to be divisible by 7, ...'). However, a view centered around the notion of common ground is problematic. What if the speaker simply does not accept that the proposition is true? The analysis of conditional speech acts developed here is based on a rational conduct of the interlocutors. Also, if a father tells his daughter on his death bed, **(10)** *If you marry, you will be happy*, then he does not expect that the common ground will go on to admit the proposition 'the daughter marries'. The notion of a commitment space has to be generalized to admit hypothetical states, or we have to accept conditional propositions as well. As an alternative, I will point the proposal of Krifka (2014), which allows for making speech acts dependent on the factual truths of antecedents. In this theory, the development of commitment spaces is part of the objective development of the world.