

From Complex to Simple Speech Acts: a Bidimensional Analysis of Illocutionary Forces

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Abstract

We present a new analysis of illocutionary forces in dialogue. We analyze them as complex conversational moves involving two dimensions: what Speaker commits herself to and what she calls on Addressee to perform. We start from the analysis of speech acts such as confirmation requests or whimperatives, and extend the analysis to seemingly simple speech acts, such as statements and queries. Then, we show how to integrate our proposal in the framework of the Grammar for Conversation (Ginzburg, to app.), which is adequate for modelling agents' information states and how they get updated.

1 Introduction

One usually assumes a one-to-one relationship between clause types and illocutionary forces, as summarized in (1):

- (1) a. The declarative type is associated with asserting.
- b. The interrogative type is associated with questioning.
- c. The imperative type is associated with requesting.
- d. The exclamative type is associated with exclaiming.

But, it has been observed (i) that the same utterance can be used to perform different speech acts, and (ii) that an utterance may simultaneously convey more than one speech act. It is the case in particular for confirmation requests, which have been analyzed as 'a superposition'

(a.o. Fontaney (1991)), or a composition of assertion and question (a.o. Asher and Reese (2005)).

In this paper, we leave aside the thorny grammatical issues raised by (1), (references will be given in the talk); we concentrate instead on how to analyze illocutionary forces in a dialogical perspective. We claim that utterances impact dialogue in two ways that we describe in terms of update. On the one hand, Speaker commits herself to some content: uttering amounts to update Speaker's commitments. On the other hand, Speaker calls on Addressee for him to change his own commitments. As Strawson puts it, an act of communication goes through if it is taken up as intended. Speaker's intention cannot be reduced to showing her own private knowledge, belief or desire; rather, Speaker intends to change the context by adding or removing something (a fact, a question...) in the shared ground. Thus, a second update concerns what Speaker requests from Addressee (that Addressee consider a new proposition as true or consider an issue as relevant for current purposes in the dialogue...). Speaker's and Addressee's updates are usually and tacitly assumed to be identical. However, we do claim here that such an identity is not always the case, and that these updates should be explicitly distinguished when analyzing illocutionary forces and the speech acts they give rise to.

We articulate our proposal in the framework of the Grammar for Conversation (Ginzburg, to app.), which (i) assumes a rich ontology of semantic content and (ii) accounts for the asymmetry between Speaker and Addressee in dialogue. We model illocutionary forces as types of moves in conversational games. Conversational moves lead from one set of shared commitments to another set of shared commitments. Commitments may be added or removed (as when a question is answered or a command is carried out). Illocu-

tionary forces can be viewed as commitment change potentials.

Our point of departure is the description of phenomena that have been described in terms of polyfunctionality or indirect speech acts (§2). We borrow our examples in English from the literature; data in French are partly elicited or taken from written or speech corpora. In §3, we present some recent analyses and a critique of them. In §4, we show how to revisit the notions of illocutionary force in general, and we sketch out the modelling of the proposal in the Grammar for Conversation.

2 Challenging Data

2.1 Utterance Polyfunctionality

Since Gazdar (1981), it has been taken for granted that clause types do not determine the illocutionary type of the utterances in a one-to-one manner (as in (1)). Gazdar's example is (2). As observed by Gazdar, (2) supports a great number of speech acts, and more importantly, speech acts of different types (assertions, questions or directives).

(2) A.: You will go home tomorrow.

The polyfunctionality of (2) out of context is reflected in the gamut of responses Addressee may perform his turn when taking up (2).

(3) B.: a. How do you know?
b. Yes.
c. That's what you think.
d. Okay.

Gazdar's line of reasoning echoes the literature about so-called indirect speech acts. (4a) in context may be taken up as an order (roughly (4b)); (5a) as an assertion (roughly (5b)); and (6a) as a directive (roughly (6b)).

(4) a. It is cold in here!
b. Close the windows!
(5) a. Will the sun rise tomorrow?
b. Of course, yes.
(6) a. Can you clean up your room?
b. Clean up your room!

2.2 Sorts of Indirect Speech Acts

Green (1975) draws a crucial distinction among so-called indirect speech acts when discussing the directive use of interrogatives: hints vs whimperative constructions. The closed inter-

rogative (7a) may be used as a directive only in a context where the addressee is expected to take away the garbage at a certain time, whereas the open interrogative (7b) conveys a directive in all contexts. According to Green, a reply to (7b) with *because* or whose content could be interpreted as a reason would not only be non-felicitous, but it would show a poor competence of English.

(7) a. Have you taken away the garbage?
b. Why don't you be quiet!

The distinction pertains to two types of resource Addressee may use to come up with an illocutionary assignment: (i) either context knowledge bearing on Addressee, Speaker, their relations in the world and the current conversation or (ii) grammaticalized features of the utterance which indicate how it should be taken up. The directive import of (7a) (or (2), (6a) above) - Green uses the labels *hint* to refer to them-- is arrived at through a chain of inferences.¹ The directive import of (7b) is directly brought about by a construction (which is a specification of an interrogative construction), a whimperative construction. The whimperative construction illustrated in (7b) features *why*, inverted *do* in the negative and a verb in the base form.

The point here is that the type of update Speaker calls on Addressee for him to perform may be marked by grammatical means that do not belong to the clause type. There are two kinds of markers that specify the type of update Speaker calls on Addressee to perform: - constructional markers such as the whimperative constructions of English;² - lexical markers such as what we call 'tags' here and that we illustrate below in French.

Tags such as *n'est-ce pas* ['isn't it?'] or *s'il te plaît* ['please'] in French fully specify the call on Addressee that is intended by Speaker. For example, (8a) or (8b), even out of context, are no

¹ The number of steps in a chain of inferences may vary. E. g., it is bigger in the case of directive declaratives such as (4a) than for the directive use of (2), since the content of the directive has to be inferred entirely in the case of (4a).

² Below, some examples of whimperative constructions in French:

- (i) a. Veux-tu bien te taire !
Would you be quiet
Be quiet!
b. Pourquoi pas acheter une voiture ?
Why not buy a car
What about buying a car?

longer “polyfunctional”: (8a) is a demand of confirmation, i.e. an utterance by which Speaker calls on Addressee to commit himself to the issue whether Addressee will go home tomorrow, whereas (8b) is a declarative directive by which Speaker calls on Addressee to bring about a state of affair in which he will go home tomorrow.

- (8) a. Tu rentreras à la maison demain, n'est-ce pas ?
You will go home tomorrow, won't you?
 b. Tu rentreras à la maison demain, s'il te plaît.
You will go home tomorrow, please.

There is a wealth of tags that vary crosslinguistically. Here, we give a very short list of them in French:

- *point barre* is compatible with declarative and imperative sentences, and specifies that the utterance is directive.

- (9) Marie ne sortira pas, point barre.
 Marie will not go out, POINT BARRE
Marie won't go out, period!
 (10) Ferme ta gueule, point barre !
 Shut-IMP your mouth, POINT BARRE
Shut up, period!

- *oui ou non* also marks a directive move, when associated with an interrogative sentence. (11a) clearly means (11b).

- (11) a. Est-ce que tu viens, oui ou non.
Are you coming, yes or no
 b. Hurry up!

- *sans indiscretion* is grammatical in two clause types, viz. interrogative and declarative, but specifies only one type of call on Addressee, viz. questioning. This is why it sounds odd to take up a turn tagged with *sans indiscretion* with expressions used for statement uptake (12b).

- (12) a. Sans indiscretion, Marie est arrivée
 Without indiscretion, Marie has arrived
Without indiscretion, has Marie arrived?
 b. A.: Sans indiscretion, Marie est arrivée
 B.: # Ah bon / Je ne le savais pas
 Oh really / I didn't know that

To sum up, we must mark off two distinct phenomena: speech act assignment (SAA) based on inferences and SAA based on grammatical (lexical or constructional) means. In the latter case, it is crucial to note that there are means to specify the call on Addressee intended by Speaker, i.e. how Speaker expects her utterance to be taken up by Addressee.

2.3 Dialogical Behaviour of Indirect Speech Acts

It has been observed that so-called indirect speech acts are not exactly equivalent to their direct counterparts; either their felicity conditions or their impact on dialogue making or the relations between discourse participants are different. This is correlated to the fact that they do not trigger the same array of responses as their direct counterparts do.³ We present below some examples in French.

Directives conveyed by interrogative clauses (13a) do not have the same impact in context as directives conveyed by imperative clauses (13b). The use of interrogative clauses is reputed more polite than that of imperatives. The question then is what brings in the politeness effect.

- (13) a. Pouvez-vous fermer la porte, s'il vous plaît ?
Can you close the door, please?
 b. Fermez la porte, s'il vous plaît !
Close the door, please!

In the same way, directive declaratives (see (14b)) may only convey commands whereas the gamut of directives conveyed by imperatives ranges from commands to suggestions or permissions. This requires an explanation.

- (14) a. Viens demain, s'il te plaît !
Come tomorrow, please!
 b. Tu viendras demain, s'il te plaît !
 You come_{FUTUR} tomorrow, please

Questions conveyed by declaratives (15a) are not felicitous in the same contexts as those conveyed by interrogatives (15b).⁴ Questioning declaratives are much more natural in situations where Speaker has good grounds to know the

³ Green (ibid. : 138) reports that the response to whimperatives is different from the response to imperatives in English.

⁴ See Gunlogson (2003) for English questioning declaratives.

answer. For example, in a situation where Speaker, upon entering the department office, sees Mary's personal belongings on her desk, (15b) would be odd whereas (15a) would be appropriate as a question to Mary's colleague already at work.

- (15) a. Marie est arrivée, n'est-ce pas ?
Marie has arrived, hasn't she?
 b. Marie est-elle arrivée ?
 Marie is-SHE_{CLITIC} arrived
Has Marie arrived?

To sum up, so-called complex speech acts are different from their simple counterparts. This should be accounted for.

3 Recent Analyses

Here, we only consider two recent proposals to account for the features characterizing speech acts: Asher and Reese (2005) and Ginzburg (to app.). Both analyses are limited to specific cases. Asher and Reese deal with biased questions and propose an analysis in terms of composition of illocutionary forces. Ginzburg deals with the interactive working of assertions and questions and proposes an analysis in terms of simple or double update of the dialogue participants' gameboard. Our own proposal will retain some of the insights generated by these two approaches.

3.1 Complex Speech Acts

Asher and Reese (2005) observe that certain questions convey an expectation by Speaker of a negative answer. Such questions are said to be biased. Asher and Reese's main idea is that biased polar questions convey both an assertion and a question; accordingly, they propose to analyze them as complex speech acts of the type *assertion * question*.

Sadock (1974) uses the distribution of discourse markers (DM) as a criterion to sort out assertions and questions. *After all*, for example, selects assertions: it is incompatible with neutral questions.

- (16) a. It is fine if you don't finish the article today. After all, your adviser is out of the country.
 b. # It is fine if you don't finish the article today. After all, is your adviser out of the country?

As to *by any chance* or *tell me*, they select questions, rather than assertions.

- (17) a. # John, by any chance, owns a car.
 b. Does John, by any chance, own a car?

Applying these tests to biased questions such as (18a) shows that they behave as assertions and questions. Asher and Reese have observed that (18a) is compatible not only with *after all* and *by any chance*, but even with both of them in a single utterance.

- (18) a. Has John ever voted for a democrat?
 b. After all, has John ever voted for a democrat?
 c. Has John by any chance ever voted for a democrat?
 d. After all, has John by any chance ever voted for a democrat?

They conclude from the felicity of (18d) that (18a) simultaneously conveys an assertion and a question.

Asher and Reese's proposal could be extended to confirmation requests (ConfR), such as (15a) above or (19) below. Confirmation requests could be seen as simultaneously conveying an assertion (by the way, syntactically, ConfRs are declarative clauses) and a question. Moreover, positive ConfRs are biased for the positive answer. Thus, (19) would be seen as conveying both the assertion that Marie has arrived and the issue whether Marie has arrived. Accordingly, ConfRs too would be associated with a complex speech act of the type *assertion * question*. At first blush, this could be corroborated by arguments such as those used by Asher and Reese in (18).

- (19) a. Après tout, Marie est arrivée, n'est-ce pas ?
After all, Marie has arrived, hasn't she?
 b. Dis-moi, Marie est arrivée, n'est-ce pas ?
Tell me, Marie has arrived, hasn't she?
 c. Après tout, dis-moi, Marie est arrivée, n'est-ce pas ?
After all, tell me, Marie has arrived, hasn't she?

Unfortunately, such a corroboration is shaky since other tests using different lexical criteria (compatible either with declaratives or interrogatives) that show that (biased) polar questions and ConfRs cannot be identified: for example, com-

patibility with *n'est-ce pas* (*n'est-ce pas* is felicitous with declaratives only).

- (20) a. # Marie est-elle (jamais) venue, n'est-ce pas ?
Did Mary (ever) come, N'EST-CE PAS
b. Marie est venue, n'est-ce pas ?
Mary came, N'EST-CE PAS

In the same manner, one could analyze whimperatives as *question*directive*. But, counterexamples analogous to (20) for ConfRs would plague the attempt.⁵ Moreover, such an analysis would fail to account for the observations in section 2.3.

3.2 Speech Acts and DGB Update

Ginzburg's grammar for interaction is predicated on the idea that dialogue can be conceived of as a game. Each turn brings about a change in the ongoing dialogue: the type and content of each change are registered in a dialogue gameboard (DGB). Each dialogue participant keeps her own DGB; the dynamics of dialogue making is reflected in the updates of DGBs that DPs operate at each turn.

Ginzburg, who argues against dialogue game formulations that are exclusively stated as operations on the Common Ground, distinguishes between a set of propositions called FACTS, and a set of questions, called QUD. He proposes to capture the dialogical difference between assertions and questions in terms of updates of these two sets in the DGB.

The dialogical impact of questions is viewed as adding a question to QUD. Crucially, the dialogical impact of assertions is viewed as a double update: update of QUD and update of FACTS. Here, Ginzburg follows Stalnaker (1978): when a speaker makes an assertion, she is committed to a proposition *p*, hence the updating of FACTS. But, this does not exhaust the effect of asserting. An assertion comes through only if Addressee too becomes committed to the same proposition. This is where QUD comes in. Since asserting *p* requires Addressee accepting *p*, Ginzburg proposes that the call on Addressee for him to accept *p* be modeled as a polar question whether *p* derived from *p*. Hence, "in general, both asserter and her addressee do have the issue *p*? in QUD

⁵ For example:

- (i) a. Veux-tu bien te taire, oui ou non !
b. # Tais-toi, oui ou non !

as a consequence of an assertion *p*" (Ginzburg, 1997).

In a nutshell, asserting involves the conversational move of questioning, and a conversational move that is specific to asserting (the updating of FACTS).

Indeed, Ginzburg's proposal implies that the dialogical behaviour of ConfRs is the same as that of regular assertions. Which is not true (reference to be given in the talk).⁶ Moreover, asserting is not the only type of speech act that crucially involves Addressee's uptake. In this respect, it is hard to see how to use QUD to analyze the impact of directives.

But, the general idea of analyzing speech acts (and types of speech acts) as updates of a dialogical gameboard is not threatened by the difficulties of Ginzburg's original analysis of asserting vs questioning.

4 Proposal

Our proposal draws on the insights embedded in both proposals presented in section 3. From Asher and Reese, we take up the idea that speech acts can be complex. From Ginzburg, we take up the idea that speech acts can be analyzed as update operations on DGBs.

More precisely, we propose that all types of speech acts (or illocutionary forces) are complex, since they involve a double update; the update of Speaker's commitments and the update of the call on Addressee.

Postulating that speech acts are bi-dimensional enables us to analyze in a unified framework both complex speech acts and their simple counterparts, while accounting for their differences in context.

4.1 Speaker's Commitment and Speaker's Call on Addressee

It has long been observed that speech acts have a 'double face': one pertaining to Speaker and another to Addressee. In pragmatic analyses, this is often expressed in terms of Speaker's attitude (belief, ignorance, desire, etc) on the one hand and the kinds of obligation⁷ layed on Addressee on the other hand.

⁶ For example, the contextual association with intonation contours is different for assertions, questions or ConfRs.

⁷ Traum and Allen (1994) claim that when an agent is asked a question, this creates an obligation to respond. They propose to add the attitude of *obligation* to the more usual attitudes of belief, goal, and intention in modelling social interaction.

The attitudinal analyses of the Speaker-oriented aspects of speech acts face severe drawbacks (references to be given in the talk) and the links between grammatical forms and types of obligations imposed by Speaker on Addressee have not been established in a precise way.⁸ This is why we will analyze speech acts as moves in conversational games. We take it that speech acts lead from one set of shared commitments to another set of shared commitments: commitments may be added or removed, as when questions are answered or commands carried out.

4.2 Modelling Speaker's Commitment

Following a suggestion made by Gazdar (1981), we extend Hamblin's notion of commitment, which is restricted to propositional content, in order to account for all general types of speech acts, i. e. questions, directives and exclamations.⁹ Gazdar (1981) proposes that "an assertion that Φ is a function that changes a context in which the speaker is not committed to justifiable true belief in Φ into a context he is so committed. A promise that Φ is a function that changes a context in which the speaker is not committed to bringing Φ into one in which he is so committed. A permission to Φ is a function that changes a context in which Φ is prohibited into one in which Φ is permissible". We use Ginzburg and Sag's ontology and Ginzburg's modelling of dialogue to make explicit this extension of the notion of commitment.

The public part of Ginzburg's DGB comprises two 'slots' (along with LATEST-MOVE that we do not consider here): a set of propositions (FACTS), a set of questions (QUD). In order to account for outcomes conveyed by imperative utterances, we follow a proposal made by Portner (2005) and add in the DGB a specific slot TO-DO-LIST (TDL). TDL is partitioned into TDL(Speaker) and TDL(Addressee). TDL(Addressee) is an ordered list of descriptions of situations the actualization of which depends on Addressee and towards which Speaker is positively oriented. It is incremented with the outcomes that Speaker presents as actualizable by Addressee. TDL(Speaker) is incremented with the outcomes that Speaker presents as actualizable by herself: either the outcomes brought

⁸ Truckenbrodt (2004) is an exception here, who presents another systematic way of capturing the call on Addressee dimension of speech acts.

⁹ We will not account for exclamations here (references and reasons to be given in the talk).

about by imperative utterances of interlocutors or those brought about by promissives.¹⁰ Consequently, three dimensions are now distinguished in the DGB, each of them consisting in a homogeneous set (a set of propositions, a set of questions, or a set of outcomes).

When Speaker utters an assertion, she makes a move by which she becomes committed to a propositional content. By saying that Mary has arrived, Speaker presents herself as ready to stand for the truth of the proposition that Mary has arrived. This is a matter of public presentation which does not necessarily correspond to Speaker's private belief.

When Speaker utters a question, she makes a move by which she becomes committed to an issue. By asking whether Mary has arrived, Speaker presents herself as being interested for current purposes in the issue of whether Mary has arrived. Once again, this is a matter of public presentation and does not correspond to one specific knowledge state.

When Speaker utters a directive utterance, she makes a move by which she becomes committed to an outcome. Outcomes correspond to states of affair in the future, the actualization of which more or less directly depends on Addressee. Speaker's commitment consists in "the affirmative stance towards the actualization of this potential" (Stefanowitsch, 2003). By ordering Mary to arrive, Speaker presents herself as positively oriented to the realization of Mary's arrival.

To summarize, an assertion brings about the incrementation of SHARED GROUND, uttering a question the incrementation of QUD and, uttering a directive utterance the incrementation of TDL(Addressee).¹¹

4.3 Modelling the Call on Addressee

Following Stalnaker, successful assertions are utterances that convey a call on Addressee for him to become committed to the propositional content Speaker commits herself to. Other types of speech acts carry a specific call on Addressee as well. By questioning, Speaker calls on Addressee to commit himself to the issue she is committed to. By uttering a directive, Speaker

¹⁰ TO-DO-LIST(Speaker) is also involved in the analysis of wishes (such as *Que le meilleur gagne* [Let the best one win!] or *Que Dieu entende ma prière* [Let God hear my prayer!]): outcomes toward which Speaker is positively oriented but the realization of which does not depend on Speaker's interlocutors.

¹¹ SHARED GROUND is the analog of FACTS in Ginzburg's framework. This will be articulated in the talk.

calls on Addressee to commit himself to the outcome she is committed to, i.e. adopt an affirmative stance towards the actualization of the outcomes.

Let us return to the cases presented in section 2. What are ConfRs (see examples (8a), (15a) (19) above)? Precisely, utterances by which Speaker calls on Addressee to take up her utterance as a question. In the same way, whimperative constructions (see (7b) above) are constructions which specify the call on Addressee: whimperative utterances should be taken up by Addressee as directives. What is the dialogical impact of expressions such as *n'est-ce pas* or *sans indiscretion* (see (8), (12) above)? Once again, such tags specify the call on Addressee. By adding *n'est-ce pas?* to her utterance, Speaker marks that she expects Addressee to take it up as a question.

In order to capture this dimension we propose to add in Speaker's DGB a slot which registers the specific call on Addressee performed by Speaker.¹² Hence, the architecture of the public part of the DGB we propose is schematized in (21).

$$(21) \quad \left[\begin{array}{c} \text{DGB} \\ \left[\begin{array}{l} \text{SG} \\ \text{QUD} \\ \text{TDL} \\ \text{CALL - ON - ADDRESSEE} \end{array} \right] \end{array} \right]$$

To sum up, Speaker commits herself either to a proposition, or to a question/issue or to an outcome/order. Simultaneously, she calls on Addressee to commit himself to a proposition, to a question/issue or to an outcome/order.

This give us the key to analyze complex speech acts (such as interrogative directives or ConfRs) along with simple speech acts (such as statements, queries or commands). In complex speech acts, Speaker's commitment and Speaker's call on Addressee are distinct, whereas they are identical in simple speech acts.

¹² CALL-ON-ADDRESSEE registers the type and content of Speaker's call on Addressee. Like LATEST MOVE - and contrarily to SG and QUD, which are structured sets - CALL-ON-ADDRESSEE contains one and only one element which is updated utterance by utterance. In the present proposal, it plays the interactive part that was carried out by QUD in Ginzburg's original proposal.

4.4 Modelling Complex and Simple Speech Acts

Complex speech acts are moves in which Speaker's commitment and Speaker's call on Addressee are different. They correspond to conversational moves that associate two updates of two different slots in Speaker's DGB with distinct contents.

For example, when uttering a ConfR, Speaker updates her SHARED GROUND with a propositional content (p) and her CALL ON ADDRESSEE with a question (?p), which corresponds to the fact that she calls on Addressee to take her utterance as a question. Tags such as *n'est-ce pas* trigger the same effect. As for the tag *s'il te plaît* (see (8b)), it signals that the propositional content added in SHARED GROUND is different from the content added in CALL ON ADDRESSEE, which is an outcome.

In the absence of marking (by a construction, a tag or intonational cues), the content and the type of the call on addressee by default is identified with Speaker's commitment (be it an update of SHARED GROUND, of QUD, or of TDL). We call simple speech acts moves in which Speaker's commitment and Speaker's call on Addressee are the same. They correspond to conversational moves that associate two updates of two different slots in Speaker's DGB with identical contents.

For example, when uttering a statement, Speaker updates her SHARED GROUND with a propositional content (p) and her CALL ON ADDRESSEE with the same propositional content (p), which corresponds to the fact that she calls on Addressee to take her utterance as an assertion.

In table 1, we give the taxonomy of types of speech acts we arrive at as they are analyzed in terms of updates of Speaker's DGB.¹³

5 Conclusion

We have proposed a unified framework to analyze speech acts, be they direct or indirect. In this abstract, we have focused on speech acts in which the call on Addressee is grammatically

¹³ Given a proposition p, we use the following convention: p? represents the polar question associated to p, and !p represents the outcome built from p, i.e. p will be true in the situation in which the outcome !p is fulfilled. For instance, if p corresponds to the sentence 'John is beautiful', then p? correspond to 'Is John beautiful?', and !p to 'Be beautiful, John!'. In this table, q' corresponds to the proposition which resolves q, and o' to the proposition which fulfills o. CoA is used to abbreviate CALL ON ADDRESSEE.

specified and in which the core content (in fact, the SOA in Ginzburg and Sag's terms) of the update of Speaker's commitments is identical to the core content of the update of Speaker's call on Addressee. The current proposal could be extended to indirect speech acts (or hints) such as those in (4)-(6) above in which the type of the

call on Addressee should be inferred from private belief about the goals of the interlocutors and in which the core content of the update of Speaker's commitments may be completely different from the core content of the update of Speaker's call on Addressee.

Clause type	Semantic content type	Conversation move types	
		Speaker-oriented Impact	Addressee-oriented impact
Declarative	Proposition p	Update (S, SG, p)	Default: Update (S, CoA, p)
			Update (S, CoA, p?)
			Update (S, CoA, !p)
Interrogative	Propositional Abstract q	Update (S, QUD, q)	Default: Update (S, CoA, q)
			Update (S, CoA, q')
			Update (S, CoA, !q')
Imperative	Outcome o	Update (S, TDL _{A,o})	Default: Update (S, CoA, o)
			Update (S, CoA, o')
			Update (S, CoA, o'?)

Table 1

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