

The distribution of issue-addressing follow-ups and the rise and fall of issues in discourse

Intro — Inquisitive semantics (Groenendijk 2007 et seq) treats *or* as an inherently inquisitive, issue-raising connective (building on previous work that treats disjunctions as sets of alternatives, e.g., Alonso-Ovalle 2006), and *and* as an inherently non-inquisitive one. This asymmetry predicts that disjunctions license issue-addressing follow-up questions (1a), but conjunctions do not (1b).

- (1) a. Jack said he would (either) wash the windows or mow the lawn. ✓ I forgot which it is.
 b. Jack said he would (both) wash the windows and mow the lawn. # I forgot which it is.

The examples below pose an apparent problem for the assumption that the felicity of these follow-ups is a reliable indicator of an issue having been raised. In (2), it looks like a disjunction fails to raise an issue (2); and in (3), it looks like a conjunction manages to do so.

- (2) A: I'm going to a conference. You have to teach my class or meet with the lab technician.
 B: You know what, I'm pretty free. I can do both. # I'll let you know when I decide which.

- (3) A: I'm going to a conference tomorrow. You have to teach my class and meet with the lab technician.
 B: You know what, I'm pretty busy. I can only do one. ✓ I'll let you know when I decide which.

Crucially, in such examples, A's conjunction/disjunction is separated from B's issue-addressing follow-up by an objection to A's assertion. This suggests that the problem does not lie with the semantics of conjunction and disjunction, but with the way this semantics interacts with conversation dynamics.

Discourse dynamics — Assume a model of conversation along the lines of Farkas and Bruce (2010), Ginzburg (2012), and related work. A conversation K consists of a sequential series of stages $\langle k_1 < k_2 < \dots < k_n \rangle$; a transition from k_i to k_{i+1} happens whenever a participant asserts, accepts, objects to, or retracts a proposition or set of propositions p . Each participant X is associated to an individualized list DC_X of publicized discourse commitments (assertions that X has made and not retracted). In a dialogue between A and B , if A asserts p , then p is added to DC_A ; If B accepts p , then p is added to DC_B ; but if B objects to p , then an alternative q incompatible with p is added to DC_B , and participants have to find a way to resolve this conflict. This might require retracting either p or q , or keeping both p and q and “agreeing to disagree”. Given this much, I propose that (4) adequately describes the distribution of issue-addressing follow-ups.

- (4) Given an issue introduced by a disjunction $[p \vee q]$ at stage k_j of the conversation, participant X can felicitously address this issue at a later stage k_i iff $[p \vee q]$ is in DC_X at k_i .

Note that (4) consists of two separate requirements: (i) $[p \vee q]$ must be in the correct DC; and (ii) at the correct conversational stage. The rest of this abstract provides arguments in favor of this position.

Baseline — Under this approach, (1a)/(1b) can effectively be modelled as monologues. When A asserts $[p \vee q]$ at k_1 , this issue is added to DC_A , allowing A to utter an issue-addressing follow-up (abbreviated IAFU in the figures at right) at k_2 . In contrast, the same follow-up is infelicitous at k_2 in (1b) because DC_A doesn't contain an issue at k_1 .

(1a)	DC_A	(1b)	DC_A
k_1	$p \vee q$	k_1	$p \wedge q$
k_2	$p \vee q$ ✓ IAFU	k_2	$p \wedge q$ # IAFU

The issue must be in the correct DC... — Consider now the analysis of (2)/(3). In (2), even though A's assertion at k_1 raises an issue, B's utterance *I'm pretty free, I can do both* at k_2 raises both the objection $\neg[p \vee q]$ to A's assertion, and the assertion of the alternative non-issue $[p \wedge q]$. The infelicity of B's follow-up at k_3 reflects the absence of $[p \vee q]$ in DC_B . In contrast, in (3), A's assertion at k_1 doesn't raise an issue, but B's utterance *I'm busy, I can only do one* amounts to the objection $\neg[p \wedge q]$ to A's assertion, and the assertion of the alternative issue $[p \vee q]$ at k_2 . The presence of $[p \vee q]$ in DC_B at k_3 makes B's follow-up felicitous.

(2)	DC_A	DC_B	(3)	DC_A	DC_B
k_1	$p \vee q$		k_1	$p \wedge q$	
k_2	$p \vee q$	$\neg[p \vee q]$ $p \wedge q$	k_2	$p \wedge q$	$\neg[p \wedge q]$ $p \vee q$
k_3	$p \vee q$	$\neg[p \vee q]$ $p \wedge q$ # IAFU	k_3	$p \wedge q$	$\neg[p \wedge q]$ $p \vee q$ ✓ IAFU

Note, importantly, that the follow-up in (2) is infelicitous even though the $[p \vee q]$ issue is present in DC_A at k_3 . This supports the requirement in (4) that $[p \vee q]$ be part of the DC of the speaker that utters the follow-up. Consider (5), a minimal extension of (2), as additional evidence. Even though B objects to A's assertion and counter-asserts $[p \wedge q]$ at k_2 , A counter-objects to B and reasserts $[p \vee q]$ at k_3 . When B utters *Ok* at k_4 , B is doing two things: first retracting both $\neg[p \vee q]$ and $[p \wedge q]$ from DC_B ; second, accepting A's reassertion and adding $[p \vee q]$ to DC_B . As a consequence, B can now utter a felicitous follow-up at k_5 .

- (5) A: You have to teach my class or meet with the lab technician.
 B: You know what, I'm pretty free. I can do both.
 A: Thanks, but you can't do that. It goes against university regulations.
 B: Ok. \checkmark I'll let you know when I decide which one I want to do.

Note that, if B insist on objecting to A's re-assertion at k_4' (i.e., B retracts neither $\neg[p \vee q]$ nor $[p \wedge q]$), as in (5'), a follow-up becomes infelicitous a k_5' .

- (5') B: Regulations be damned! $\#$ I'll let you know when I decide which one I want to do.

... and at the correct stage — Having $[p \vee q]$ in the correct DC is not enough; it must also be there at the stage the follow-up is uttered. Consider (6), a minimal extension of (3). At k_2 , B objects to A's assertion and counter-asserts $[p \vee q]$. At k_3 , A counter-objects to B and re-asserts $[p \wedge q]$. As above, when B utters *Fine, fine* at k_4 , two things happen: first, B retracts both $\neg[p \wedge q]$ and $[p \vee q]$; and second, B accepts A's re-assertion of $[p \wedge q]$, adding it to DC_B . Note that, in the course of the whole conversation, $[p \vee q]$ is only ever present in DC_B ; but because it is not in DC_B at k_5 , a follow-up addressing this issue is infelicitous.

- (6) A: You have to teach my class and meet with the lab technician.
 B: You know what, I'm busy. I can only do one.
 A: I appreciate you're busy, but I really need you to do both.
 B: Fine, fine. $\#$ I'll let you know when I decide which one I want to do.

As in (5'), this outcome can be reversed if B insists on objecting to A's re-assertion at k_4' . As (6') illustrates, the persistence of $[p \vee q]$ at k_5' licenses a felicitous follow up.

- (6') B: No, you don't get it, I'm really busy. \checkmark I'll let you know when I decide which one I want to do.

Extensions — In general, these patterns highlight the need to integrate our theories of semantics with a formal theory of conversation dynamics. Here I have focused on the behavior of conjunctions and disjunctions in assertions, but this model can in principle be extended to study the rise and fall of issues associated to other types of expressions —e.g., indefinites, (polar) questions, and their interactions (see the remarks in Farkas and Bruce 2010). It can also be applied to the study of how speakers reactions to each other raise issues even in the absence of inherently issue-raising expressions (cf. (7C) vs. (7C'), and the discussion in Ginzburg 2012).

- (7) A: I think we should ask the Dean for more lab space.
 B: I think we should ask him for money for a new hire.
 C: We are a weak department and money is tight! \checkmark We need to decide which we are going to ask for.
 C': We are a strong department and money abounds! $\#$ We need to decide which we are going to ask for.

(5)	DC_A	DC_B
k_1	$p \vee q$	
k_2	$p \vee q$	$\neg[p \vee q]$ $p \wedge q$
k_3	$p \vee q$ $\neg[p \wedge q]$	$\neg[p \vee q]$ $p \wedge q$
k_4	$p \vee q$ $\neg[p \wedge q]$	$p \vee q$
k_5	$p \vee q$ $\neg[p \wedge q]$	$p \vee q$ \checkmark IAFU

k_4'	$p \vee q$ $\neg[p \wedge q]$	$\neg[p \vee q]$ $p \wedge q$
k_5'	$p \vee q$ $\neg[p \wedge q]$	$\neg[p \vee q]$ $p \wedge q$ $\#$ IAFU

(6)	DC_A	DC_B
k_1	$p \wedge q$	
k_2	$p \wedge q$	$\neg[p \wedge q]$ $p \vee q$
k_3	$p \wedge q$ $\neg[p \vee q]$	$\neg[p \wedge q]$ $p \vee q$
k_4	$p \wedge q$ $\neg[p \vee q]$	$p \wedge q$
k_5	$p \wedge q$ $\neg[p \vee q]$	$p \wedge q$ $\#$ IAFU

k_4'	$p \wedge q$ $\neg[p \vee q]$	$\neg[p \wedge q]$ $p \vee q$
k_5'	$p \wedge q$ $\neg[p \vee q]$	$\neg[p \wedge q]$ $p \vee q$ \checkmark IAFU

REFERENCES— Alonso-Ovalle 06 Disjunction in alternative semantics, PhD UMass • Farkas and Bruce 10 On reacting to assertions and polar questions. *JoS* 27 • Ginzburg 12 *The interactive stance*. OUP • Groenendijk 07 Inquisitive semantics: two possibilities for disjunction. *TbiLLC* 2007