

# G N' R: Appetite for Disjunction

(Or: Comments on “Inquisitive Semantics and Pragmatics”)

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## 1 Overview

Some things I think are right, if not necessarily distinctive, about this work:

- Alternative semantics for disjunction (it's very useful to have sets of alternatives that are available to speech-act operators, modal operators, etc.).
- Moving away from the partition analysis of questions. (Inquisitive formulas denote possibly overlapping, possibly non-exhaustive sets of alternatives.)

Some things I'd be interested in hearing more about (will flesh this out in my comments):

- What motivates the project? Data-driven? (If so, what's the data?) An independently interesting logic? (If so, what's so interesting about it?)
- Relatedly: is this just a non-classical variant of alternative semantics in the vein of [Aloni & van Rooy \(2002\)](#); [Kratzer & Shimoyama \(2002\)](#)?
- Does the larger research program (the one with the webpage) form an essential part of the main action in the paper?

## 2 Inquisitive Semantics

Step one: a recursive characterization of when a state (set of worlds) **supports** a formula.

- (1)  $\sigma \models p$  iff  $\sigma \subseteq V(p)$
- (2)  $\sigma \models \neg\phi$  iff  $\forall\tau \subseteq \sigma : \tau \not\models \phi$
- (3)  $\sigma \models \phi \vee \psi$  iff  $\sigma \models \phi$  or  $\sigma \models \psi$
- (4)  $\sigma \models \phi \wedge \psi$  iff  $\sigma \models \phi$  and  $\sigma \models \psi$
- (5)  $\sigma \models \phi \rightarrow \psi$  iff  $\forall\tau \subseteq \sigma : \tau \models \phi \Rightarrow \tau \models \psi$

A **possibility** for  $\phi$  in a set of worlds  $\sigma$  is a maximal substate  $\sigma'$  of  $\sigma$  such that  $\sigma' \models \phi$ . The **proposition** expressed by  $\phi$ ,  $[\phi]$ , is the set of possibilities for  $\phi$  in  $W$ .

- (6)  $?\phi := \phi \vee \neg\phi$
- (7)  $[\!|\phi] := \bigcup\{\sigma : \sigma \text{ is a possibility for } \phi \text{ in } W\}$

Some formulas  $\phi$  are simultaneously **inquisitive** in  $W$  ( $\geq 2$  possibly overlapping possibilities for  $\phi$  in  $W$ ) and **informative** in  $W$  ( $\geq 1$  possibility for  $\phi$  in  $W$  [ $\phi$  is **acceptable** in  $W$ ], and

$W - [!\phi] \neq \emptyset$  [ $\phi$  is **eliminative** in  $W$ ]).<sup>1</sup> For instance:

- $p \vee q$  is both inquisitive and informative (since  $[p \vee q] = \{\llbracket p \rrbracket, \llbracket q \rrbracket\}$ )
- $?p$  is inquisitive, but not informative (since  $\cup[?p] = \cup\{\llbracket p \rrbracket, \llbracket p \rrbracket'\} = W$ )

Some more results to get the hang of things:

- (8)  $[?p \vee ?q] = \{\llbracket p \rrbracket, \llbracket p \rrbracket', \llbracket q \rrbracket, \llbracket q \rrbracket'\}$   
 (9)  $[?p \wedge ?q] = \{\llbracket p \wedge q \rrbracket, \llbracket p \wedge \neg q \rrbracket, \llbracket \neg p \wedge q \rrbracket, \llbracket \neg p \wedge \neg q \rrbracket\}$   
 (10)  $[?(p \rightarrow q)] = \{\llbracket p \rightarrow q \rrbracket, \llbracket p \wedge \neg q \rrbracket\}$   
 (11)  $[p \rightarrow ?q] = \{\llbracket p \rightarrow q \rrbracket, \llbracket p \rightarrow \neg q \rrbracket\}$

**Syntax, Semantics, Functional Potential.** Notably, “[Q]uestions and assertions are not distinguished syntactically, but are characterized semantically” (p.9) according to *what kinds of move in a language game they can be used to make* (questions: purely inquisitive; assertions: purely informative).

This style of work is sometimes criticized for writing too much of the pragmatics down in the semantics, but, in a way, G&R evince a rather *moderate* view of the syntax-semantics-pragmatics divide. The analytical methodology seems to be this:

- Identify types of force (question, assertion, hybrid)  $\Rightarrow$   
 Identify subtypes of these types (polar, alternative-presenting, functional, pair-list)  $\Rightarrow$   
 Design a language  $\mathcal{L}$  (+semantics for  $\mathcal{L}$ ) that represents the distinctions between them  $\Rightarrow$   
 Map *utterance-tokens* to  $\mathcal{L}$ -representations according to what use they are put

Compare a more extreme view: “conventional” or “canonical” discourse function *supervenes* on mood / syntactic type / semantic type (by which I mean data type of semantic value, not “semantic category,” in G&R’s sense).<sup>2</sup> According to this sort of view:

- Mood/syntactic type/semantic type determines canonical discourse function (so: *very much* is being encoded in the syntax and semantics).
- There are potential *gaps* between canonical discourse function and actual discourse function, on an occasion of use. These need to be explained. (Think of a question that is used to grant a permission: *would you like to take an apple?*)

G&R’s view is more flexible and incurs different, *perhaps* weaker, commitments. (If you’re bothered by calling it “semantics,” try thinking of them as providing a precise apparatus for representing meaning in some less contentious sense.)

1. My notation:  $\llbracket \phi \rrbracket$  is used to denote the classical possible worlds proposition expressed by  $\phi$ .

2. Paul Portner, who associates major clause-types with different sorts of “sentential force,” is one prominent defender of this sort of view. See Portner (2004, 2008). Perhaps Stalnaker is another: “The purpose of expressing propositions is to [distinguish among alternative possible ways that things may be]” (Stalnaker 1978).

### 3 Some reservations.

**Syntax is sometimes relevant!** We need to be careful not to let a refusal to distinguish questions and assertions by syntactic type bleed into a refusal to let syntax do *any* work in distinguishing questions from assertions (or polar questions from alternative-presenting questions). For this formalism to be a useful tool in the analysis of natural language, we’ll need a principled and adequate way of assigning  $\mathcal{L}$ -representations to utterance-tokens. There is no such method that doesn’t pay attention to, e.g., focal structure.

Also, we’re going to need a focused language to explicitly represent focal structure. That’s one more formal language we’re going to need to go through in getting to semantic values for natural language utterances. (How bothersome this is will depend on the degree to which natural, rather than formal, language is the object of inquiry.)

**What does Inquisitive Semantics buy us?** Compare an alternative view: instead of taking the detour through  $\mathcal{L}$ , we *directly* assign sets of alternatives to utterance-tokens.<sup>3</sup> Is this any less explanatory than the method of generating sets of alternatives that G&R use? I don’t think so. (I’ll return to this point at the end.)

**Unrestricted disjunction?** Consider the formula  $?p \vee ?q$ . G&R claim this expresses a “choice question”: “To resolve it, one may either provide an answer to the question  $?p$  or to the question  $?q$ .” I don’t think question-acts can disjoin in this way. You can add alternatives to an alternative-presenting question (so adding a  $\vee$  between  $p \vee q$  and  $r \vee s$  makes sense), but I don’t think I can waffle about which polar question I am asking—not with a single utterance, anyway. It’s like trying to disjoin two requests—odd!<sup>4</sup>

(12) ??Is it raining, or is it snowing—I haven’t decided which?

(13) ??Tell me whether it’s cold or tell me whether it’s rainy—I haven’t decided which.

**Translation of alternative-presenting questions?** G&R claim the natural translation of (14) is  $?(p \vee q)$  (p.27).

(14) Will ALF or BEA go to the party?

I would have thought it was  $p \vee q$ . Note that:

(15)  $[?(p \vee q)] = \{\llbracket p \rrbracket, \llbracket q \rrbracket, \llbracket \neg p \wedge \neg q \rrbracket\}$

(16)  $[p \vee q] = \{\llbracket p \rrbracket, \llbracket q \rrbracket\}$

As G&R note, analyzing alternative-presenting questions with the form  $?(p \vee q)$  creates a problem for the view: explaining why  $!(p \vee q)$  (*yes*) and  $!\neg(p \vee q)$  (*neither*) are bad responses to the

3. Or, if we’re really wedded to Montague’s indirect method, we translate into set-descriptions, which we then map into sets of alternatives.

4. Hamblin (1987) thinks that (13) is fine. I can’t replicate this judgment. See Krifka (2004) for some putative examples—ultimately, in my opinion, unpersuasive—of disjoined speech-acts.

question. They do explain it, by way of showing how to use their view to generate implicatures via a Gricean kind of reasoning about questions-the-speaker-could-have-asked-but-didn't. But the problem evaporates if we adopt the correct representation of the alternative-presenting question,  $p \vee q$ .

These points together point to a larger issue you might have with the project: alienation from the ostensible object of inquiry (natural language discourse).

## 4 Inquisitive Pragmatics

### Ingredients.

- Individuals (conversational participants)
- Info states  $\sigma_i$ , for each individual  $i$ .  $\sigma_i$  embodies what  $i$  *takes herself* to know.
- Common ground  $\sigma_C$ . Embodies common information / knowledge.

**Conversational norms.** Let  $\phi$  an utterance by  $S$  to  $A$ .  $\phi$  should be:

- *Significant*: either informative or inquisitive in  $\sigma_C$ .
- *Sincere*: uninformative in  $\sigma_S$  and, if inquisitive in  $\sigma_C$ , also inquisitive in  $\sigma_S$ .
- *Transparent*: absorbed into  $\sigma_C$ , hence into  $\sigma_A$ <sup>5</sup> (unless unacceptable in  $\sigma_A$ , in which case  $A$  should voice an objection).

**Compliance.** A pairwise relation  $\propto$  between an utterance  $\psi$  and a reply  $\phi$ .  $\phi \propto \psi$  iff:

i.  $\forall \alpha \in [\phi] : \exists P \subseteq [\psi] : \alpha = \cup P$

Every possibility in  $[\phi]$  is the union of a set of possibilities in  $[\psi]$ .

ii.  $\forall \alpha \in [\psi] : \exists \beta \in [\phi] : \alpha \cap [\phi] \subseteq \beta$

Informally:  $\phi$  is at least as easy to answer as  $\psi$ . (If  $\phi$  is informative, we test this by focusing on the issues updated by the information in  $\phi$ .)

More informative replies are, *ceteris paribus*, preferred: if  $\phi_1$  and  $\phi_2$  are possible assertive replies to  $\psi$  and both  $\phi_1 \propto \psi$  and  $\phi_2 \propto \psi$ ,  $\phi_1$  is *more compliant* than  $\phi_2$  if  $\{\alpha \in [\psi] : \alpha \subseteq [\phi_1]\} \subset \{\alpha \in [\psi] : \alpha \subseteq [\phi_2]\}$ .

Note: by requiring that  $\forall \alpha \in [\phi] : \exists P \subseteq [\psi] : \alpha = \cup P$ , rather than  $\forall \alpha \in [\phi] : \exists P \subseteq [\psi] : \alpha \subseteq \cup P$ , *over-informative* replies are ruled noncompliant, regardless of whether they bear on the issues raised by  $\psi$ . (By saying more than is required to resolve the issues, you risk conflict with your addressee's information state.)

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5. If  $\sigma_C$  bears a bit of information, everyone should take herself to know it:  $\bigcup_i \sigma_i \subseteq \sigma_C$ .

Clarification: if  $\psi$  is inquisitive, then  $!\psi$  is a compliant response to  $\psi$ , per the definition of  $\alpha$ . This seems wrong (it sanctions responding to alternative-presenting questions as if they were polar). This conflicts with an earlier remark: when  $\phi$  is an *assertive* reply to  $\psi$ ,  $\llbracket\phi\rrbracket$  “must coincide with the union of a *proper* non-empty subset of  $\llbracket\psi\rrbracket$ ” (p.19). Do G&R intend what they say about compliant assertive responses here to carry over to compliance in general?

## 5 Issues

**Conditional Questions.** What makes (11) rather than (10) the right semantics for conditional questions? The thought seems to be that  $p \rightarrow \neg q$  is the optimally compliant “negative” response to  $p \rightarrow ?q$ . But then  $p \wedge \neg q$  is predicted *over-informative*, hence noncompliant. But generally conditional questions are asked amidst uncertainty about their antecedents. There is nothing noncompliant (because there’s nothing risky) about resolving this uncertainty in the course of answering the conditional question, even if doing so is not required.<sup>6</sup>

**Material Implication?** Endorsing a kind of material implication analysis of conditional questions rather drastically limits the reach of this proposal vis-à-vis natural language. That’s because *indicative*, rather than material, conditionals are often (probably, in fact, usually) the sought-after reply to a conditional question.

- (17) A: If I ask for something, will you always buy it for me?  
 B: No, if you ask for something, I sometimes won’t buy it for you.

Two options for representing B’s reply:

- (18)  $\neg\forall t \in \{t' : \text{you ask for something at } t'\} : I \text{ will buy it for you at } t$   
 (19)  $\text{you ask for something} \rightarrow \neg\forall t : I \text{ will buy it for you at } t$

The second is horrible. Ignoring the donkey anaphora, the truth conditions are just *wrong*. Not only does G&R’s account lack the resources to predict this sort of phenomenon. It seems like an account which did would involve some sort of *restrictable* question operator: one which queried, for each of a restrictable domain of situations, whether some condition held in them.<sup>7</sup> (This also explains why a response like “Tomorrow I will (buy what you ask for), but the following day I won’t” is a felicitous, rather than over-informative, response.)

**Status of the Maxims?** The status of Grice’s maxims is something like a set of *normative platitudes* about conversations, wedded to no theoretical apparatus in particular. It is not hard to think of cases where failure to comply with Gricean maxims is in some sense licensed. But such cases don’t really threaten the status of the maxims, because of their status as normative platitudes (compare: *don’t kill*).

6. Dustin Tucker will, I believe, have a few other examples roughly in this vein in his comments.

7. This is different from, but related to, the analysis of the question operator that Krifka’s work on embedded questions argues for. See Krifka (2001, 2004).

Similarly, it's not hard to think of cases where failure to comply with G&R's maxims is in some sense licensed. But not all of these maxims have the status of platitudes. Clearly they're intended to be regulative of conversation, but in some cases their normativity isn't obvious.

G&R's norms admit of two kinds of violation:

- Non-conversationally justified violations—cases where conversational norms are trumped by other goals we might have (rhetorical questions, quizzes, etc.). No problem here.
- Conversationally justified violations. For instance:
  - Violations of compliance (these are rampant).
  - Violations of inquisitive sincerity: utterances that are less informative than I *could* be, but that are as informative *as required*. Consider a case where the addressee takes seriously (and *S* knows she takes seriously) the possibility that no one is coming to the party,  $\neg(p \vee q)$ . *S* knows who's coming (although their identity is not an issue under discussion), so *S* utters the disjunction  $p \vee q$ . All that is required for the purposes of the conversation is that *A* *take these possibilities seriously*, and *S*'s utterance ensures that she does.<sup>8</sup>

In the Gricean context, conversationally justified violations are generally (but perhaps not always) so because they are *exploited* by speakers and addressees to infer things beyond what was strictly said. Not so here—we just have idle violations. We might tolerate this if the norms had the status of theoretically neutral platitudes. But they don't—they emerge from a very particular representation of context and information-exchange.

**Does Inquisitive Pragmatics Demand Inquisitive Semantics?** There are lots of ways to generate sets of alternatives. For instance, Aloni uses higher-order propositional quantification plus tweaking of propositional assignment functions (Aloni & van Rooy 2002; Aloni 2007) (note that, unlike G&R, this sort of proposal is able to generate sets of alternatives for *quantified formulas*; ditto for Kratzer & Shimoyama 2002).

G&R's picture of conversation could be reformulated simply by letting *alternatives* (generated using Aloni's method) go proxy for *possibilities* in all of the norms, and jettisoning inquisitive semantics. Insofar as Aloni's proposal attempts to link alternative sets to focal structure (see esp. Aloni & van Rooy 2002) (and insofar as shifting focus is the main way that speakers modify the alternative-set), this would actually be a substantial descriptive improvement—we would have a fuller picture of the map from utterance-tokens in natural language to representations in our logic of alternatives.

For their part, G&R distinguish the inquisitive semantic approach as follows:

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8. Does the Gricean have a parallel problem—generating the false expectation (via implicature) that the speaker does not know whether *p* or *q*? No, the Gricean says Quantity implicatures are generated when there is another *relevant* stronger thing that could have been said. Here there is not.

What is new about inquisitive semantics is that it puts the inquisitive aspect of meaning directly *at the heart* of the notion of semantic content, and does not treat it as a *collateral* feature. The new conception of propositions as proposals, and the shift to a conversation oriented logic that it brings along, provide philosophical and mathematical foundations for research in the above-mentioned linguistic traditions, and may pave the way for more extensive applications (p.5).

But:

- I’m not sure what the theoretical / empirical upshot of putting alternatives “at the heart” of semantic content is. Is there any? In what sense do other logics of alternatives fail to do so?
- Even if we jettison inquisitive semantics, we can still treat speech-acts as proposals for modifying various conversational parameters. Inquisitive semantics isn’t, as far as I can tell, essential to the “conversation oriented logic” they propose.

This still seems like important, potentially very fruitful work. But perhaps less of it is genuinely proprietary than the proprietors think.

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