Ignorance Implicatures and Non-doxastic Attitude Verbs

**Data:** Consider the following scenarios and reports that follow them:

**Three Visitors:** On Friday, Bill gets a letter from his friends Alice, Chris and Ted saying that exactly one of them will visit Bill on Sunday. On Saturday, Bill gets a message from Alice saying that she won’t be able to manage a visit — the message is silent about which of Chris or Ted will visit. On Sunday, Bill hears a knock on the door and rushes to open it. Before Bill answers, I utter:

(1) (a) Bill wonders whether Chris or Ted is at the door.
    (b) ?? Bill wonders whether Alice, Chris or Ted is at the door (Roelofson & Uegaki, 2016).

**Dictator:** Bill is traveling in a faraway land. He has just heard that the country’s dictator died a few hours ago. Bill is ruminating on the cause of the death. I utter:

(2) (a) Bill wonders whether the dictator was assassinated.
    (b) ?? Bill wonders whether the dictator is dead and was assassinated (Rostworowski, forthcoming).

While (1a)-(2a) are acceptable in their respective contexts, (1b)-(2b) are not. Intuitively, what seems to be required for (1b) to be acceptable is that it is compatible with Bill’s knowledge that Alice is at the door; and what seems to be required for (2b) to be acceptable is that it is compatible with Bill’s knowledge that the dictator is not dead. That is, Bill cannot know that Alice will not be coming, and he cannot know that the dictator is dead. Let us call these inferences ignorance implicatures.

**Summary:** I argue that the best way to account for ignorance implicatures is by appealing to a notion of contextual redundancy (Schlenker, 2008; Fox, 2008; Mayr & Romoli, 2016). In short, (1b)-(2b) are infelicitous because they have constituents that are redundant in context: the propositions that they express could have been expressed by syntactically simpler sentences, namely (1a)-(2a). This pragmatic approach to ignorance implicatures stands in contrast to a recent semantic account of the behavior of disjunctions under ‘wonder’ developed by Roelofson & Uegaki (2016) (henceforth ‘R&U’). I argue that R&U’s semantic account cannot handle conjunctions under ‘wonder’, so a pragmatic account of ignorance implicatures is superior.

**Proposal:** I assume the semantics for ‘wonder’ developed by Ciardelli & Roelofsen (2015) that is set in epistemic inquisitive logic:

(3) ‘S wonders φ’ is true at w iff $\sigma_S(w) \notin \llbracket \phi \rrbracket$ and $\Sigma_S(w) \subseteq \llbracket \phi \rrbracket$\(^1\)

Given (3), it is straightforward (but tedious) to show that ‘S wonders whether A, B, or C’ is contextually equivalent to ‘S wonders whether B or C’ when S knows that A is false; and it is straightforward to show that ‘S wonders whether A and B’ is contextually equivalent to ‘S wonders whether B’ when S knows that A is true.\(^2\) Thus, (4) explains why the (b) sentences are infelicitous, since ‘Alice is at the door’ and ‘the dictator is dead’ are incrementally redundant in (1b) and (2b), respectively:

\(^1\)$\sigma_\alpha(w)$ is $\alpha$’s information state at $w$: $\Sigma_\alpha(w)$ is $\alpha$’s inquisitive state at $w$: the set of information states such that each information state settles all the issues that $\alpha$ entertains at $w$. It is assumed that $\Sigma_\alpha(w)$ forms a cover of $\sigma_\alpha(w)$: $\bigcup \Sigma_\alpha(w) = \sigma_\alpha(w)$.

\(^2\)$Sentences $\phi$ and $\psi$ are contextually equivalent with respect to context $C$ iff $\{w \in C : \llbracket \phi \rrbracket(w) = 1\} = \{w \in C : \llbracket \psi \rrbracket(w) = 1\}$ (Singh, 2011).
(4) **Incremental non-redundancy condition**: $\phi$ cannot be used in context $C$ if any part $\psi$ of $\phi$ is incrementally redundant in $\phi$ given $C$.

(A) **Incremental redundancy**:
(i) $\psi$ is incrementally redundant in $\phi$ given a context $C$ if it is globally redundant in all $\phi'$, where $\phi'$ is a possible continuation of $\phi$ at point $\psi$.
(ii) $\phi'$ is a possible continuation of $\phi$ at point $\psi$ iff it is like $\phi$ in its structure and number of constituents, but the constituents pronounced after $\psi$ are possibly different.

(B) **Global redundancy**:
(i) $\psi$ is globally redundant in $\phi$ given a context $C$ if $\phi$ is contextually equivalent to $\phi'$, where $\phi'$ is a simplification of $\phi$ without $\psi$.
(ii) $\psi$ is a simplification of $\phi$ if $\psi$ can be derived from $\phi$ by replacing nodes in $\phi$ with their subconstituents (Mayr & Romoli, 2016).

**R&U’s approach**: R&U try to account for the infelicity of (1 b) by enriching Ciardelli & Roelofsen (2015)’s semantics with a built-in exhaustivity operator that takes an expression $\varphi$ and a set of alternatives, and ‘strengthens’ $\varphi$ by negating every alternative that is not entailed by $\varphi$:

(5) $\text{wonder } Q = \lambda x. \text{exh}_{W_x(Q' \land Q' \leq Q)} W_x(Q')$  

(5) predicts that (1 b) is false in *Three Visitors* since (1 a) is an alternative for exhaustification and is true in context. However, this semantic approach does not predict ignorance implicatures of conjunctions under ‘wonder’. (6) is an (innocently excludable (Fox, 2007)) alternative for (2 b) since ‘wonder’ is non-monotonic:

(6) Bill wonders whether the dictator is dead.

On R&U’s account, (2 b) is true only if (6) is false. Given (3), (6) is false just in case either $\sigma_{Bill}(w) \in [\text{whether the dictator is dead}]$ or $\Sigma_{Bill}(w) \not{\subseteq} [\text{whether the dictator is dead}]$. If Bill knows that the dictator is dead, then $\sigma_{Bill}(w) \in [\text{whether the dictator is dead}]$. Thus, R&U’s account does not predict that (2 b) is unacceptable when Bill knows that the dictator is dead. Furthermore, R&U’s truth-conditions for (2 b) seem too strong: it is easy to imagine contexts where both the unexhaustified (2 b) and (6) are acceptable.

**Other verbs**: It is worth observing that ignorance implicatures arise with a variety of non-doctrastic attitude verbs:

(7) (a) Bill hopes that Ted or Alice is at the door.
(b) Bill wants Ted or Alice to be at the door.
(c) Bill hopes that the first coin landed heads and the second coin landed heads.
(d) Bill wants the first coin to have landed heads and the second coin to have landed heads.

(7 a)-(7 b) are infelicitous when Bill knows that Alice isn’t at the door; and (7 c)-(7 d) are infelicitous when Bill knows that the first coin landed heads. On mainstream semantics for ‘hope’ and ‘want’–namely ideal worlds accounts (von Fintel, 1999) as well as similarity approaches (Heim, 1992) – it is easy to show that ‘$S$ hopes/wants $A$ or $B$’ is contextually equivalent to ‘$S$ hopes/wants $B$’ when $S$ knows that $A$ is false; and it is easy to show that ‘$S$ hopes/wants $A$ and $B$’ is contextually equivalent to ‘$S$ hopes/wants $B$’ when $S$ knows that $A$ is true. So, (4) can account for the ignorance implicatures of these verbs as well.

\[\text{exh}_{A}(...):= \varphi \land \bigwedge_{\neg \psi} \psi \in A \text{ and } \varphi \not{\vDash} \psi\]

\[\varphi \not{\subseteq} \psi \iff \varphi \text{ can be obtained from } \varphi \text{ by deleting constituents or replacing them with other constituents of the same syntactic category, taken either from the lexicon or from } \varphi \text{ itself (Katzir, 2007).}\]
References


