

Sluicing as anaphora to issues

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I. Introduction: Sluicing is the ellipsis process in (1) where an interrogative clause (subscript E) is elided under identity with a prior clause (subscript A). Merchant (2001) argues that (modulo focus) the needed identity condition is a *semantic* one: symmetric entailment between A and E. The present paper addresses two open issues for such an account. First, what are the semantic constraints on possible licensors of sluicing in the A clause, such that they include not only indefinites, as in (1), but also disjunctions, as in (2). Second, how can the identity condition on sluicing be formulated so as to account for the contrast between the ungrammatical (3) and the truth-conditionally equivalent, yet grammatical, (4).

1. [Someone left]_A. [Who left]_E?
2. [John or Fred left]_A. Tell me [which (one) left]_E?
3. *[The cake was eaten]_A, but I don't know [who ate the eake]_E
4. [The cake was eaten by someone]_A, but I don't know [who ate the cake]_E

We argue that the symmetric entailment condition fails only if we equate semantic content with truth-conditions alone. If we instead take it to comprise not only truth conditions, but also *issues*, as in Inquisitive Semantics (Groenendijk & Roelofsen (2009), Ciardelli (2009) *a.o.*), we can distinguish between the A clauses in (3) and (4) while capturing the parallelism between (1) and (2). Additionally, we extend the account to handle novel data: the infelicity of sluicing in ‘backgrounded’ environments (e.g. appositives and absolute adjuncts).

II. The semantics of issues: Taking seriously the idea that assertion is a *proposal* to update the common ground (Stalnaker (1978), Bruce and Farkas (to appear)), inquisitive semantics treats assertions, like questions, as denoting sets of *sets* of possible worlds. In many sentences, this set will be the singleton set containing only the classical denotation. Sentences with widest-scope inquisitive elements – the indefinite in (5), the disjunction in (6) – propose a non-singleton set of alternatives, raising the issue of which one(s) holds, but not obliging a response (ALT excludes non-maximal would-be alternatives). Crucially, the logic lets distinguishes two truth-conditionally equivalent existentials: the inquisitive one in (6) and the classical one in (7) (! is Groenendijk & Roelofsen (2009)’s non-inquisitive closure operator). Since entailment is defined by inclusion of alternatives, a sentence with an inquisitive indefinite will asymmetrically entail one with a classical indefinite.

5. $\llbracket \varphi \vee \psi \rrbracket^{\mathcal{M},g} = \text{ALT}\{\alpha \subseteq W \mid \exists \beta \in \llbracket \varphi \rrbracket^{\mathcal{M},g} : \alpha \subseteq \beta \text{ or } \exists \gamma \in \llbracket \psi \rrbracket^{\mathcal{M},g} : \alpha \subseteq \gamma\}$
6. $\llbracket \exists u \varphi \rrbracket^{\mathcal{M},g} = \text{ALT}\{\alpha \subseteq W \mid \text{there is some } d \in \mathcal{D}_e \text{ s.t. } \exists \beta \in \llbracket \varphi \rrbracket^{\mathcal{M},g[u/d]} : \alpha \subseteq \beta\}$
7. $\llbracket \exists ! u \varphi \rrbracket^{\mathcal{M},g} = \text{ALT}\{\alpha \subseteq W \mid \forall w' \in \alpha \text{ there is some } \beta \in \llbracket \exists u \varphi \rrbracket^{\mathcal{M},g} \text{ s.t. } w' \in \beta\}.$

The at-issue content of a wh-question in (8) is the same as the indefinite since the wh-indefinite *who* contributes an inquisitive existential. The question differs only in that its proposal is rendered *uninformative* by its classical existential presupposition, yielding roughly a Hamblin semantics. Other ways to achieve uninformativity are possible (see Groenendijk & Roelofsen (2009)), but less convenient for our current purposes.

8. $\llbracket \text{[Who left?]} \rrbracket = \text{Presupposes: } \exists x. \text{left}'(x), \text{ At-issue: } \exists x. \text{left}'(x)$

III. Sluicing and symmetric entailment: Combining this semantics for questions with symmetric entailment, we predict the grammaticality of (1) as in (9) since the antecedent and elided clauses entail one another. Given the contextual restriction of *which*, we also predict the felicity of (2) since the at-issue component of both the disjunction and the question in (10) will consist of two alternatives. Implicit passive agents intuitively differ from overt indefinites in that they expressly avoid raising the issue of who the agent is. As such, we translate

them as classical existentials, contributing only the *information* that there is someone satisfying the predicate. As seen in (11), we predict the infelicity of (3) since the question, with an inquisitive existential, will asymmetrically entail the passive with the implicit agent.

- 9. $\llbracket(1)_A\rrbracket \Leftrightarrow \llbracket(1)_E\rrbracket$ i.e. $\exists x.\text{left}'(x) \Leftrightarrow \exists x.\text{left}'(x)$.
- 10. $\llbracket(2)_A\rrbracket \Leftrightarrow \llbracket(2)_E\rrbracket$ i.e. $\text{left}'(j) \vee \text{left}'(f) \Leftrightarrow \exists x.x \in \{j,f\} \wedge \text{left}'(x)$
- 11. $\llbracket(3)_A\rrbracket \Leftrightarrow \llbracket(3)_E\rrbracket$ since $\neg \exists x.\text{eat}'(x,\text{cake}) \not\Rightarrow \exists x.\text{eat}'(x,\text{cake})$

IV. Backgrounded content and sluicing: The sentences that raise issues are those which denote proposals to update the common ground with non-singleton sets of alternatives. We expect, then, that semantic content which is not a *proposal* at all should be unable to raise issues. We argue that appositives and absolute adjuncts are such cases, constituting *actual* updates on the common ground rather than proposals to be accepted or rejected by the addressee. We capture this intuitive characterization of backgrounded content by positing the comma operator in (12) which takes the possibly inquisitive content of the appositive/absolute adjunct and returns the set of worlds where some alternative in it holds (note that backgrounded content is of type *st*, whereas at-issue content is of type *stt*).

- 12. $\llbracket\text{COMMA}(\varphi)\rrbracket = \{w \mid \text{there is some } \alpha \in \llbracket\varphi\rrbracket \text{ s.t. } w \in \alpha\}$

Since backgrounded content simply denotes a set of possible worlds, we expect that any inquisitive elements within them will be unable to raise issues in the common ground and therefore that sluicing in these environments is severely degraded as seen in the contrasts in (13)-(14), a fact previously unnoticed in the sluicing literature. Moreover, these same environments readily allow VP-Ellipsis as in (15)-(16) (N.B. the opposite pattern as MAX-ELIDE cases), showing that these facts cannot be explained by appeal to discourse parallelism of the sort proposed by Takahashi & Fox (2005) or Hardt & Romero (2004).

- 13. Joe, who once killed a man in cold blood, doesn't even remember who *?(it was).
- 14. Having defeated a masked enemy, the valiant knight wonder who *?(it was).
- 15. Mary, who didn't help her sister, told Jane to instead.
- 16. Having defeated the enemy, the valiant knight's comrades were inspired to too.

V. Sprouting: Whereas the above examples involve anaphora to a previously raised issue, there are also sluices as in (17) (termed ‘sprouting’) where the elided clause introduces a discourse-new issue. Such cases differ from the implicit passive agent and inquisitive elements in backgrounded environments discussed above since the latter involve a linguistic form specifically committed to *non-issuehood* while the antecedents of (17) and Chung et al. (1995)’s (18) neither raise nor suppress an issue; they take no stance whatsoever.

- 17. [Bill stirred the soup]_A, but I’m not sure [with what he stirred the soup]_E.
- 18. [John is working on War and Peace]_A, but I don’t know [which chapter]_E

Following Merchant (2001), we assume that the key to understanding such cases lies in the observation that the material in the E clause is focused/ not given. In a theory of sluicing as anaphora to issues, these data can be captured as accommodation of the focal alternatives introduced by the focused phrase (e.g. ‘which chapter’), much in the way that bridging definites allow for the accommodation of novel discourse referents.

References: [1] Chung S., Ladusaw, W. and McCloskey, J. (1995). Sluicing and logical form, *NLS* 3, 239-282. [2] Farkas, D. and Bruce, K. (to appear). On reacting to assertions and polar questions, *JoS*. [3] Groenendijk and Roelofsen (2009). Inquisitive Semantics and Pragmatics, *IWSPandR*. [4] Hardt, D. and Romero, M. (2004). Ellipsis and the Structure of Discourse, *JoS* 21, 375-414. [5] Merchant (2001). The Syntax of Silence, *Oxford Univ. Press*. [6] Stalnaker, R. (1978). Assertion, *Syn. and Sem.* 9, 315-332. [7] Takahashi, S. and Fox, D. (2005). MAX-ELIDE and the Re-binding Problem, *SALT XV*.