

Typology of sluicing in wh- and non-wh-questions

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While sluicing, (1a), has received much attention in the literature since Ross (1969/2012), little is known about other types of embedded fragment questions. Although ungrammatical in English, they are common cross-linguistically, as illustrated by the Polish data in (1b-c).

- (1) a. Sluicing
Zosia coś ugotowała, ale nie wiem, co
 Zosia something she.cooked but NEG I.know what
 ‘Zosia cooked something, but I don’t know what.’
- b. Embedded fragment of an alternative question: **Or-sluicing**
Zosia coś ugotowała, ale nie wiem, [(czy) ryż]
Zosia coś kasz-ę grzyczan-ą]
 Zosia something she.cooked but NEG I.know whether rice
 czy porridge-ACC of.buckwheat-ACC
 ‘Zosia cooked something, but I don’t know whether (she cooked) rice or buckwheat.’
- c. Embedded fragment of a Y/N question: **Y/N sluicing**
Zosia coś ugotowała, ale nie wiem, [czy ryż.]
 Zosia something she.cooked but NEG I.know whether rice
 ‘Zosia cooked something, but I don’t know whether (she cooked) rice.’

I show that sluicing, or- sluicing, and Y/N-sluicing are subject to cross-linguistic variation that obeys the following implicational universal, and provide an analysis that derives it.

- (a) If a language allows Y/N sluicing, it will also allow or-sluicing and regular sluicing.
 (b) If a language allows or-sluicing, it will also allow regular sluicing.

The universal has been verified for Polish, Russian, Serbian, Latvian, Lithuanian, Hebrew, Yiddish, Romanian, Spanish, Hungarian, Moksha Mordvin, Tyvan, Yakut, Noghay, Turkish, Japanese, Lingala, Bezhta, Kumbarlang, and Pokomchi, which allow all the 3 types of sluicing; Hindi, Persian, Ossetic, Italian, French, Brazilian Portuguese, German, Slovenian, Albanian, Bulgarian, Georgian, Svan, Basque, Kannada, Syrian Arabic, which all allow wh- and or-sluicing; English, Dutch, Frisian, Swedish, Danish, Icelandic, Finnish, and Greek, which only allow wh-sluicing; whereas Twi/Akan, Quechua, Amharic, Chechen, Lezgian, Degema, Mandarin, Kaingang, Khmer, Chatino, Wolof, Itsari Dargwa, and Burushaski do not allow any embedded fragment questions. Crucially, different acceptability of embedded sluices of different types is a fact about deletion rather than about the different ability to front of different types of XPs, i.e., of wh-phrases, of foci of Y/N questions, and of foci of alternative questions. For instance, in some languages the focus of a Y/N question may be fronted, but the corresponding sluice is ungrammatical, see the data in (2):

- (2) a. *ar vici [<?tu> γoms <tu> amzadebs Manana]*
 NEG I.know COMP grits COMP cooks Manana
 ‘I don’t know whether it is grits that Manana cooks.’ Georgian
- b. **manana rayacas amzadebs. ar vici [<tu> γoms <tu>]*
 Manana something cooks NEG I.know COMP grits COMP
 ‘Manana cooks something. I don’t know whether (it is) grits.’ (intended) Georgian

Accordingly, it is indeed the specific properties of the ellipsis licensing feature rather than frontability of the focused constituent that is responsible for the (un)grammaticality of different sluicing types in a given language. **NON-WH SLUICING IN THE LITERATURE:** Under the analysis of Lipták, van Craenenbroeck (2006, 2013), these are specific instances of *focus sluicing*: the remnant occupies the specifier of FocP and deletion is licensed by the feature hosted by Foc⁰. The properties

of the feature that licenses the ellipsis are otherwise identical to those of the feature E that licenses regular sluicing, Merchant (2001). However, this analysis does not directly predict the implicational universal. **INFORMAL IDEA:** What distinguishes wh-questions, alternative questions, and Y/N questions is the number of *relevant exhaustive answers* they allow. A relevant exhaustive answer is one that fully answers the question and finishes the discourse. A Y/N question has only one relevant exhaustive answer, Biezma & Rawlins (2012): for the question ‘*Did Bill cook RICE?*’ the answer ‘*Yes*’ concludes the discourse, while the answer ‘*No*’ invites the next question, say, ‘*What did he cook then?*’. An alternative question, ‘*Did Bill cook RICE or BEANS?*’ allows 2 relevant exhaustive answers: ‘*Rice*’ and ‘*Beans*’. An alternative question with N disjuncts will allow N such answers. A wh-question, say, ‘*What did Bill cook?*’ allows an infinite number of relevant exhaustive answers: ‘*Rice*’/‘*Beans*’/‘*Stew*’, etc. To account for the behavior of D-linked wh-phrases, which, as far as sluicing is concerned, is identical to the behavior of non-D-linked ones, we need to consider the question without its context: when no salient set is fixed, the question ‘*Which dish did Bill cook?*’ still has an infinite number of potential answers. For questions of the type ‘*Which dish of the two did Bill cook?*’ the restricting set should be excluded and the question ‘*Which dish did Bill cook?*’ should be evaluated instead. **THEORETICAL ASSUMPTIONS:** Fragment questions are obtained by deletion from complete sentential questions, extending the analysis of Arregi (2010) and *pace* Ginsburg, Sag (2000). Deletion is licensed by the feature E that is situated on the complementizer C_Q^0 that heads the embedded question, Lobeck (1995); Merchant (2001). The sluice may occupy Spec of a lower head F^0 , Toosarvandani (2008); Lipták, van Craenenbroeck (2006, 2013). In the latter case, C_Q^0 and the head F^0 whose complement gets deleted enter in agreement relationship, Aelbrecht (2010).

(3) $[C_Q^0[E] \dots [FP XP_{Remnant} F^0 [Elided\ material] \dots]]$
Agree

For Y/N question, I assume that the sluice-to-be, i.e. the focus of a question, is fronted into a focus position, whose complement then gets deleted. To derive alternative questions, I adopt the analysis of Han, Romero (2004), for more cross-linguistic support see Gračanin-Yüksek (2012, 2014); Uegaki (2014a,b): alternative questions arise by disjunction of polar questions, fronting of the foci of the polar questions, as proposed by Arregi (2010), and deletion. **FORMAL IMPLEMENTATION:** After considering and rejecting an analysis that is based on the cartography of interrogative heads in the left periphery and the variation in height of the licensing feature location, I propose the following. The head C_Q^0 can optionally carry the ellipsis licensing feature E. The feature E imposes the following condition on ellipsis: deletion is licensed if (a) the material in the complement of the head that hosts the sluice is E-given (in the sense of Merchant (2001)); and (b) the number of the relevant exhaustive answers to the *normalized question* is not less than G. The normalized question is defined as follows: in the absence of D-linked wh-phrases or an overt restricting set, it is identical to the actual question. Otherwise, the question presupposition and the restricting set should be excluded from consideration. Languages vary as to the setting of the parameter G: for $G=1$, all the three types of sluicing will be licensed, for $G=2$, or-sluicing and wh-sluicing; for $G=\infty$, only wh-sluicing. Finally, C_Q^0 in a language may lack the E-feature, in which case sluicing is impossible. As has been argued recently, E-giveness might need to be replaced by a more sophisticated condition, AnderBois (2010); Barros (2014). Their arguments extend to non-wh-sluicing as well, but I use E-giveness for the sake of simplicity. **CONCLUSION:** Sluicing in embedded questions is subject to cross-linguistic variation. The reason for this variation are regular differences in the content of ellipsis licensing feature. Moreover, *pace* Lipták, van Craenenbroeck (2006, 2013) the feature that triggers fronting of the remnant is not necessarily the same that licenses deletion.