Deriving obligatory movement in apparent parasitic gaps in Japanese
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1 The puzzle
Japanese has gaps that behave like parasitic gaps in English. In (1a), the gap inside a subject relative clause island can be bound by the wh-phrase when it has undergone A'-movement in a cleft; but not when the wh-phrase is in situ, as in (1b). This contrast is parallel to what we can observe in English, as shown in (2).

(1) a. [[Kaigi-de e_i mikaketa hito-ga t_i kiniitta] no-wa dare-o desu ka? at-meeting saw person liked NL-TOP who be Q
   ‘Who, was it that a person who saw e_i at the meeting liked t_i?’

b. * [Kaigi-de e_i mikaketa hito-ga dare-o kiniitta no?
   at-meeting saw person who liked Q
   ‘Who, did the person who saw e at the meeting like t?’

(2) a. I forget which article John filed t_i [without reading pg ]

b. * I forget who filed which articles, [without reading pg ].

To account for this contrast, Takahashi (2006) argues that the empty category inside the island is an elided position, which obtains its content by copying the real trace. When there is no wh-movement, what is copied onto e is the wh-phrase itself, which does not lead to the intended bound reading. On the other hand, Abe (2011) argues that the empty categories in (1a) are real parasitic gaps, like those found in English. Assuming Nissenbaum’s (1998) analysis, the obligatory movement in (1a-b) would be motivated by a type mismatch. In this study, I present data that show all instances of apparent parasitic gaps in Japanese are null pronouns (pro) in line with Hoji (1985), contra both Takahashi and Abe. The contrast in (1a-b) arises, I propose, from the semantic composition of questions in Japanese; for the empty category to covary with the wh-phrase, it must move, leaving behind a trace.

2 Data
There are two arguments for my claim that parasitic gaps in Japanese are pro. First, they cannot appear in anti-pronominal contexts (Postal 1998). In (3), an empty category in the subject relative clause island cannot be bound by the wh-phrase when it occurs in the change-of-color environment.

(3) * [kabe-o e_i nutta hito]-ga isu-o t_i nutta no-wa naniro,-ni desu ka?
   wall-ACC painted person chair no-wa what color be Q
   ‘[What color], was it that the person who painted the wall e_i painted the chair t_i?’

Moreover, apparent parasitic gaps in Japanese cannot appear in other types of anti-pronominal contexts, including adverbial positions (Takahashi 2006, 21), and name positions (data not shown). Second, the apparent parasitic gaps in Japanese can be in a DP or PP position, not an AP position. Even though Takahashi (2006, 18) claims that DP, PP, AP, and a part of idiom chunks can be apparent parasitic gaps, I surveyed 18 speakers of Japanese, and the result showed that there was a clear difference in acceptability of DP, PP gaps and AP gaps: AP gaps were usually rejected, while DP and PP gaps were accepted at the same rate. The difference between AP and DP/PP was significant (Wilcoxon rank sum test: W= 15826.5, p < 0.0001).

3 Apparent parasitic gaps in Japanese are pro
To account for this distribution of apparent parasitic gaps in Japanese, I propose that all of them are pro. This analysis predicts that apparent parasitic gaps can appear only in places where pro can appear. This is why parasitic gaps cannot appear in anti-pronominal contexts. Moreover,
APs are not possible antecedents of pro in Japanese. On the other hand, DPs and PPs can be antecedents of pro. So we can explain the difference in acceptability between them.

The data shown above would be unexpected to both Takahashi (2006) and Abe (2011). If apparent parasitic gaps are the result of argument ellipsis, as Takahashi proposes, it is hard to explain why such an ellipsis cannot happen in the anti-pronominal contexts. Moreover, if ellipsis can apply equally across categories, there should be no difference in acceptability between DPs and PPs, on the one hand, and APs, on the other. Similarly, if these empty categories are real parasitic gaps with the syntax that Nissenbaum (1998) proposes, then they should be able to appear in anti-pronominal contexts because in his account, parasitic gaps are trace of null operator movement, and the wh-extraction is possible even in anti-pronominal contexts (What color did you paint the wall t?). Also, there would be no categorical restriction as well.

4 Solving the puzzle

Recall that the bound reading cannot be obtained without movement, just like English parasitic gap cases. I propose that the contrast in (1a-b) arises from the semantic composition of questions in Japanese. I assume that wh-phrases in Japanese can be interpreted in situ, and they introduce a set of alternatives (Shimoyama 2006). This set combines with the meaning of other elements in the sentence by pointwise functional application, so that the question operator combines with a set of propositional alternatives.

This compositional mechanism derives the ungrammaticality of (1b) under the bound interpretation. The pro in the island cannot covary with the wh-phrase because alternatives derived by the wh-phrase are independent of the assignment function which is applied to the whole sentence. In other words, the value of pro is determined by the assignment function independently, as shown in (4).

\[
(4) \quad \llbracket (1b) \rrbracket = Q(\{ \text{a person who saw pro}_1 \text{ at the meeting liked John, a person who saw pro}_1 \text{ at the meeting liked Mary, } \ldots \})
\]

On the other hand, when the wh-phrase moves, it leaves behind a trace. The lambda operator that abstracts over the trace can also abstract over pro inside the island, as in (5a). This makes covariation possible as long as pro and the trace have the same index. Therefore we can get the set of alternatives we want, as shown in (5b).

\[
(5) \quad \llbracket (1a) \rrbracket = Q(\{ \text{a person who saw Bob at the meeting liked Bob, a person who saw John at the meeting liked John, } \ldots \})
\]

To conclude, this null pronominal analysis of Japanese apparent parasitic gaps can predict where the gaps can appear: exactly in the same positions as pro can appear. Furthermore, the contrast in availability of the bound reading in (1a-b) comes from the semantic composition of questions in Japanese.

References