Can Selection Explain Stranding?  
Revisiting a Structural Asymmetry

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Abstract In this squib, I show that San Martín Peras Mixtec demonstrates the same extraction asymmetry that is found in several Mayan languages: subextraction of interrogative possessors is possible from transitive objects and unaccusative subjects, but not possible from transitive or unergative subjects. I revisit the account of this asymmetry provided in Aissen (1996), adapting and applying it to the analysis of pied-piping and extraction in Coon (2009). I hypothesize that the difference in subextraction acceptability lies in the different selectional requirements of v and V: while V can take either a QP, a DP or a DP$_{|uQ|}$ as its complement, v can only select a QP or a DP as its specifier.

1 Introduction

In this squib, I provide novel data to show that San Martín Peras Mixtec (henceforth, SMPM) displays an extraction asymmetry: interrogative possessors can subextract from within the subject of an unaccusative subject or the direct object of an transitive verb, but not from within a transitive subject or unergative subject. In this respect, SMPM resembles two other Mesoamerican languages—Tsotsil and Ch’ol (Mayan)—both of which have the same pattern of restrictions, as described in Aissen (1996) and Coon (2009), respectively.

An example of the contrast is given in (1). While an interrogative possessor contained within the subject of an unaccusative predicate can strand its possesseum in situ (1a), an interrogative possessor contained within the subject of an unergative predicate cannot (1b).

(1) a. Yó nìtsivi [kárro ŋá’a ___]  
who broke.down car thing  
‘Whose car broke down?’

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In this paper, I revisit the account of this asymmetry provided in Aissen (1996), assuming the analysis of subextraction from possessive DPs presented in Coon (2009).

Aissen (1996) argues that the same asymmetry in Tsotsil stems from whether the trace is able to be properly governed in each position (Empty Category Principle). She argues that traces within the complement of V can be governed, while traces in the specifier of VP cannot, leading to the impossibility of subextraction from transitive or unergative subjects. This reasoning is very much in line with the prevailing theoretical assumptions of the time—subject-object asymmetries were used as part of the original motivation for the ECP (Chomsky 1981), and the ECP was also used in a similar way to account for argument-adjunct extraction asymmetries (e.g. Huang 1982; Rizzi 1990). However, given more recent Minimalist movement away from notions such as Government (Chomsky 1995, 2000), it is worthwhile to reconsider how we can account for and understand the asymmetry displayed in Mesoamerican languages, as well as other structural asymmetries that were previously accounted for using the ECP.

Coon (2009), for her part, briefly notes that the same extraction asymmetry holds for Ch’ol, but the analysis in her brief squib does not attempt to account for it. Instead, Coon’s main purpose is to account for the difference between subextraction and pied-piping by showing that the two are distinguished by the position of a Question Particle (which heads a QP) relative to the possessum. In cases where the Q particle takes the entire possessive phrase as its sister, phrasal movement of the QP to the specifier of CP will cause the entire possessive DP to front. In cases where the Q particle takes the possessor as its sister, only the possessor will front when the QP is moved, stranding the possessum in situ.

This squib, then, has two main goals. First, I provide the data to show that SMPM displays the same extraction asymmetry as Tsotsil and Ch’ol (§2), suggesting that it may be an areal feature of Mesoamerica, or perhaps an even more general cross-linguistic phenomenon. Second, I apply Aissen’s core insight about the asymmetry (§3)—that it reflects a difference in selection—to Coon’s analysis of extraction and pied-piping (§4), formulating a hypothesis that provides a first step towards accounting for this restriction in Minimalist terms (§5). Beyond these narrow goals, this squib is also a small step towards a larger goal of reconsidering how formal tools, and the phenomena that they were adopted to explain, can be reunderstood given changing theoretical assumptions, by reducing them to their core essential properties (see e.g. Rizzi 2016).
2 The Facts

SMPM is an Otomanguean language spoken in Oaxaca, Mexico, and by sizable diaspora populations in various parts of California. Default word order in out-of-the-blue contexts is VSO, but deviations from this order are common when forming questions, as well as when certain constituents are topicalized or in focus. Relevant for our purposes here is the fact that SMPM has obligatory wh-movement to a preverbal position (Ostrove 2018; Hedding 2020), like other varieties of Mixtec (e.g. Caponigro et al. 2013; Macaulay 1996; Eberhardt 1999).

2.1 Possession in SMPM

I am aware of three basic ways of expressing possession in SMPM, with each structure corresponding to a different type of possessum. The first is used for inalienable possession, such as of family members and body parts. Here the possessor immediately follows the possessum (2a). The second is used for alienable possession, such as of human-made objects (2b). Here the possessum and the possessor are separated by the word ňa’ā, which literally means thing.\(^1\) The third type of possession structure is used for the possession of things within the “animal” noun class, which includes animals, as well as spherical objects, such as some fruit (2c). In this case, the possessum and its possessor are separated by the word sana, which as far as I know has no other meaning.

(2) a. sè’e Maria
child M.
‘Maria’s child’

b. karro ňa’ā Eraclio
car thing E.
‘Eraclio’s car’

c. tsìnà sana Juan
dog poss.aml J.
‘Juan’s dog’

In most cases, it is ungrammatical to insert ňa’ā in cases of inalienable possession (such as with kinship terms) and ungrammatical to remove it from alienable possession structures. However, I am aware of a few words that optionally take ňa’ā when they are possessed, perhaps reflecting cases where possession

\(^1\) Most prepositional meanings in Mesoamerican languages are derived from words that are also used for body parts (Campbell et al. 1986). It seems reasonable to assume that thing is used in possession structures in a similar way: a nominal that provides a preposition-like meaning. I remain agnostic here on whether this is truly a preposition that is historically derived from a noun, whether it is a noun that creates a preposition-type meaning when it forms a compound with another noun, or whether it has some other structure.
can variably be construed as alienable or inalienable.

(3)  

a. **amigo** (ñà’á) **Margarita**  
   friend thing M.  
   ‘Margarita’s friend’  

b. **utu** (ñà’á) **Juan**  
   corn.field thing J.  
   ‘Juan’s cornfield’

2.2 Pied-piping with Inversion

Like many other Mesoamerican languages, SMPM displays pied-piping with inversion (PPWI). That is, despite the fact that possessors follow their possessa in non-interrogative contexts (4a), a fronted interrogative possessor will proceed its pied-piped possessum (4b). Though I do not discuss it here, inversion also occurs when a wh-word pied-pipes a preposition.

(4)  

a. **Kìshâ** [sè’e **Juan**] **Ahuejutla**  
   arrived child J. A.  
   ‘Juan’s child arrived in Ahuejutla.’  

b.  

   [Yó sè’e kìshâ Ahuejutla]  
   who child arrived A.  
   ‘Whose child arrived in Ahuejutla?’

PPWI is an areal feature of Mesoamerican languages. It also occurs in other Mixtec languages (Caponigro et al. 2013; Eberhardt 1999), as well as Zapotec languages (Broadwell 2001; Black 1994), and Mayan languages (Aissen 1996; Coon 2009; Broadwell 2005; Polian and Aissen 2020).

For the purposes of this paper, I assume, following Aissen (1996) and Coon (2009) that inversion occurs when the interrogative possessor moves to the specifier of a possessive DP. In addition, following Cable (2010) and Coon (2009), I assume that the target for wh-movement to the specifier of CP is a QP which contains a wh-word. When this QP dominates the entire possessive DP, then the possessum moves along with the interrogative possessor, creating the illusion of pied-piping.

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2 While Aissen (1996) and Coon (2009) assume that the possessor originates as a rightward specifier of NP, Coon (2010) argues that the base order of possessum-possessor is derived via movement of the possessum to a DP-internal functional head. Here I remain agnostic on whether possessa remain in their base position or are moved, as it will have no bearing on the question under discussion.
My assumption about the derivation of PPWI is not entirely innocent, however, as there are some empirical uncertainties that remain about how inversion is derived in SMPM. There is some evidence that multiple derivations can result in inversion. As (5) predicts, in many cases the interrogative possessor simply appears at the beginning of the fronted constituent.

(6) PPWI with Unaccusative Subject
   a. [Yó sè’e ___ nàkaba ___] who child fell
      ‘Whose child fell?’
   b. [Yó ndána ñà’ā ___ nita’avi ___] who window thing broke
      ‘Whose window broke?’
   c. [Yó tsìnà sana ___ nish’i ___] who dog POSS.AML died
      ‘Whose dog died?’

However, there are two other possibilities that should be noted. First, in most cases a fronted possessive DP can be optionally doubled by a clitic which agrees in noun class with the possessum. In some instances, this seems to improve the acceptability of the sentence.

(7) Yó ndána ñà’ā yá nita’avi
    who window thing it.NEUT broke
    ‘Whose window broke?’ (cf. 6b)

This is consistent with a general tendency in SMPM for fronted constituents to be doubled by pronouns in certain contexts. This may be a way of indicating contrast or signaling D-linking (Hedding 2020), or perhaps it reflects a distinct
derivation. I expect that more naturally occurring examples or more carefully constructed contexts will help clarify the cases in which speakers prefer doubling.

Second, alienable and “animal” possession can also undergo what we might call “complete inversion,” where the order of elements within the fronted constituent are completely reversed, in addition to cases where only the interrogative possessor occurs in a non-canonical position.

(8)  Yó sana tsinà nishi’i
      who poss.aml dog died

‘Whose dog died?’

As this squib primarily focuses on the possibility of possessum stranding, I leave investigation of these various possibilities to future work.

2.3 Stranding

In addition to pied-piping possessa along with fronted wh-words, SMPM also allows for the possibility of possessum stranding in certain contexts. First, stranding of a possessum that is part of an unaccusative subject is possible (9), in addition to pied-piping with inversion (6). Here I use % to indicate judgments that seem to be subject to inter-speaker variation. Of the two speakers consulted for this squib, one found stranding in cases of inalienable possession to be somewhat degraded (though perhaps not completely ungrammatical). The other speaker found them completely acceptable. A similar observation is made by Coon (2009) (pg. 168, fn. 5), who notes that some speakers of Ch’ol seem to disprefer stranding inalienably possessed nouns. This suggests the possibility of a structural or semantic difference between alienable and inalienable possession that influences the grammaticality of extraction, at least for some speakers.

(9)  Extraction Possible from Unaccusative Subject

   a.  %Yó nàkaba [sè’e ___]
       who fell child
       ‘Whose child fell?’
   b.  Yó nita’avi [ndâna ñà’ǎ ___]
       who broke window thing
       ‘Whose window broke?’
   c.  Yó (nà) nishi’i [tsinà sana ___]
       who 3sg.n died dog poss.aml
       ‘Whose dog died?’

Stranding a possessum within a transitive object is also possible (10), with the same caveat about inalienably possessed nouns. PPWI is also possible (11).
(10) Extraction Possible from Transitive Object
a. %Yó  shînon [táta ___]
   who saw.2sg father
   'Whose father did you see?’
b. Yó  shîshon [ndayajyí vá’a ſà’á ___]
   who ate.2sg broth    good thing
   'Whose mole³ did you eat?’
c. Yó  sà-kūshi Maria [tsinà sana ___]
   who CAUS-eat M.       dog    POSS.AML
   ‘Whose dog did Maria feed?’

(11) PPWI with Transitive Object
a. [Yó  táta ___] shînon ___
   who father    saw.2sg
   'Whose father did you see?’
b. [Yó  ndayajyí vá’a ſà’á ___] shishon ___
   who broth    good thing    ate.2sg
   ‘Whose mole did you eat?’
c. [Yó  tsinà sana ___] sà-kūshi Maria ___
   who dog       POSS.AML    CAUS-eat M.
   ‘Whose dog did Maria feed?’

In contrast, possessum stranding is ungrammatical within an unergative subject (12). Instead, only pied-piping with inversion is possible (13).

(12) No Extraction from Unergative Subject
a. *Yó  ka’an [sè’e ___]
   who speaks child
   Intended: Whose child is speaking?
b. *Yó  shînun [amigo ſà’á ___]
   who runs  friend thing
   Intended: Whose friend is running?
c. *Yó  ndâyi [tsinà sana ___]
   who barks dog    POSS.AML
   Intended: Whose dog is barking?

(13) PPWI with Unergative Subject
a. [Yó  sè’e ___] ka’an ___
   who child    speaks
   ‘Whose child is speaking?’

³ Mole is a catch-all term for several different sauces common in Oaxaca, which are typically made using a combination of chiles, nuts, and spices.
Finally, possessor extraction is also not possible from a transitive subject (14), once again leaving pied-piping with inversion as the only option (15).

(14) No extraction from Transitive Subject
   a. *Yó  tsyâ  [sè’e] shitâ
      who makes child  tortillas
      Intended: Whose child is making tortillas?
   b. *Yó  kâni  [kárro] itûn
      who hit car  thing  tree
      Intended: Whose car hit the tree?
   c. *Yó  shàshi  [tsinà] kônû
      who ate dog  poss.aml  meat
      Intended: Whose dog ate the meat?

(15) PPWI with Transitive Subject
   a. [Yó  sè’e] tsyâ  shitâ
      who child  makes  tortillas
      ‘Whose child is making tortillas?’
   b. [Yó  kárro  ñà’á] kâni  itûn
      who car  thing  hit  tree
      ‘Whose car hit the tree?’
   c. [Yó  tsinà] shàshi  kônû
      who dog  poss.aml  ate  meat
      ‘Whose dog ate the meat?’

These observations partially overlap with those previously reported for SMPM. While Ostrove (2018) also reports that subextraction is impossible from transitive subjects or unergative subjects, he argues that possessum stranding within unaccusative subjects and transitive objects is only possible when the possessor undergoes A-movement, such as quantifier raising, but not Ā-movement, such as wh-movement (pg. 153-157). Perhaps importantly however, many of the ungrammatical examples of possessum stranding that he reports involve inalienable possession, while many of his grammatical examples of stranding under A-movement involve alienable possession. As previously mentioned, stranding inalienably possessed nouns is degraded, at least for some speakers. Thus, it is
possible that the difference in grammaticality that Ostrove reports actually highlights a sensitivity to this difference for some speakers. While future exploration of the generalization presented in Ostrove (2018) is certainly warranted, in this paper I will assume instead that the generalization in (16) holds for SMPM, as it seems to for Tsotsil and Ch’ol.

(16) **Subextraction Generalization:**
Possessors can subextract from the complement of V, but not from the specifier of vP.

### 3 Aissen and the ECP

Aissen (1996) accounts for this generalization in Tsotsil by appealing to the Empty Category Principle (Chomsky 1981). That is, she assumes that every trace has to be either lexically governed or antecedent governed. Under the definitions she assumes (pg. 459), traces are antecedent governed if they are bound within a local domain, and traces are lexically governed if they are c-commanded by a head that is [+V] (i.e. V or I) within a local domain. She assumes that domains are delineated by barriers, which are any maximal projection that is not sister to a [+V] head. Specifically, a trace must be governed by something that it is subja-cent to—that is, for any barrier between the trace and its governor, the maximal projection immediately dominating the barrier must also dominate the governor.

Because they originate as the complement of V, a possessive DP that is an unaccusative subject or transitive object is not a barrier. This contrasts with unergative subjects, which are *not* sister to V or I, and thus *are* barriers. This additional barrier means that a trace within an unergative or transitive subject can not be governed, and thus extraction from within an unergative or transitive subject will be ill-formed. This is exemplified by the trees in (17) and (18) on the following page. I indicate barriers with boxes, government with dotted lines, and ungoverned traces with a circle.4

Important for our purposes will be to consider the underlying intuition of Aissen’s account, rather than focusing on her specific implementation. Crucially, her account derives the difference based on *selection*. Selection determines barriers, and barriers can block government. Thus, her insight might be restated as follows: possessum stranding is possible from constituents that are selected by the verb, but not from other constituents. In this way, her account closely mirrors the Condition on Extraction Domain (CED) (Huang 1982), which states that a phrase can only be subextracted out of a domain that is properly governed. Because Huang (1982) assumes that a lexical category will properly govern its object, the CED will rule out extraction from subjects or adjuncts.

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4 Note that Aissen (1996) assumes that in Tsotsil lexical heads have a rightward specifier and functional heads have a leftward specifier (see the Specifier Ordering Principle, pg. 451).
4 Extraction vs. Pied-Piping according to Coon

Coon (2009) uses data from the Mayan language Ch’ol to argue against a feature percolation account of pied-piping (e.g. Grimshaw 2005), and in favor of a Q-particle analysis (Cable 2010). Under this analysis, “wh-movement” is triggered by an agreement relationship between a CP with an uninterpretable Q feature, and a QP that bears an interpretable Q feature. QP is headed by a Q-particle which is sometimes null, and which contains a wh-word in its c-command domain. In her paper, Coon shows that a Q-particle analysis of pied-piping in Ch’ol can straightforwardly account for multiple-possessor structures, while an analysis assuming feature percolation requires additional, unmotivated stipulations. I refer the interested reader to her paper for the details of her reasoning.

Important for our purposes is Coon’s account of the difference between pied-piping and possessor extraction. For her, the difference is based on the position...
of the Q-particle relative to the possessive DP. If Q is sister to the possessive DP, then phrasal movement of QP to the specifier of CP will move both the possessor and the possessum (pied-piping) (19). If, however, Q is sister to the possessor, then phrasal movement of QP will strand the possessum in situ (20). In order to account for pied-piping with inversion, as well as the possibility of a QP extracting from within a DP, Coon argues that DPs in Ch’ol can bear an uninterpretable Q feature. This uninterpretable feature will attract either the interrogative possessor (triggering inversion in 19) or the QP itself (moving it to an escape hatch from which it can move to spec-CP in 20).

(19) Pied-Piping with Inversion

\[
\begin{array}{c}
\text{QP} \\
Q \\
\text{DP} \\
\end{array}
\]

(20) Possesor Extraction

\[
\begin{array}{c}
\text{DP} \\
\text{NP} \\
N \quad \text{Possessum} \\
\end{array}
\]

While she notes that possessum stranding is only possible within unaccusative subjects and transitive objects in Ch’ol (pg. 166), her analysis does not explicitly account for this asymmetry. Because she does not indicate any restrictions on the distribution of DP\textsubscript{[uQ]}, we have no reason to expect that the DP in (20) could not be the specifier of vP, triggering extraction from a transitive subject or unergative subject.

5 A Selectional Hypothesis

If we combine the respective insights of Aissen (1996) and Coon (2009), an analysis begins to emerge. According to Coon, the difference between cases of pied-piping and possessor extraction reflects a difference in where a Q-particle is merged relative to the possessive DP. If Q is sister to the entire DP, then the

\cite{coon2009}

\footnote{Coon also shows that a QP can be merged in between two possessors in Ch’ol, which accounts for the possibility of one possessor fronting and another possessor being stranded in a multiple-possessor structure. I leave exploration of this possibility in SMPM to future work.}
possessum will move along with the QP when it fronts to spec-CP. If, however, Q is sister to the possessor, then QP will front without the possessum, stranding it in situ. Moreover, the insight of Aissen’s analysis is that the possibility of subextraction depends on whether the possessive DP is directly selected by the verb or not. If the possessive DP is sister to the verb, then subextraction is possible. If, however, the possessive DP is not sister to the verb, then subextraction is blocked.

If we want to maintain Aissen’s intuition while adopting the analysis of Coon, then we are lead to the following hypothesis:

(21) **A Selectional Hypothesis**

a. *V* can select DP, QP or DP\[uQ\] as its complement.

b. *v* can select DP or QP, but not DP\[uQ\] as its specifier.

Suppose that *V* can select either a QP or a DP\[uQ\] as its complement (in addition to DPs with no Q feature). If it selects a QP, then its entire complement will front as a unit, triggering pied-piping. If, however, it selects a DP\[uQ\], then if there is QP sister to the possessum it will subextract via spec-DP. Now suppose that *v* cannot merge a DP\[uQ\] as its specifier. Then, subextraction of the possessor will not be possible from transitive or unergative subjects. Even if a QP were merged inside the possessive DP as the sister of the possessum, it would not be attracted to the specifier of DP (due to the lack of an uninterpretable feature on D), and, by hypothesis, it would then not be able to move to the specifier of CP, due to the fact that it will not move to an escape-hatch and thus will be inaccessible to a probe on C (Gavruseva 2000). If we assume that an uninterpretable Q feature on C must be valued in order for the derivation to converge, then if a QP does not value this feature we expect the derivation to crash. If, however, QP is directly merged as the specifier of *v*P, then the entire possessive DP subject will front.

Given the scope of this squib, (21) will remain as a hypothesis to be explored in future work. While it is perhaps not controversial to claim that *V* and *v* have different selectional requirements, ideally we would find a principled reason for this difference. In the case of (21), the difference is especially striking because it is not simply that *V* and *v* select phrases of different categories. Rather, they select phrases of the same category, but one restricts phrases bearing a certain uninterpretable feature. It should go without saying that much more work must be done to investigate the viability of selectional restrictions as a way to account for this and other subject extraction restrictions.

### 6 Conclusion

This squib has had two modest goals. The first was to demonstrate that SMPM displays the same extraction restriction as two other Mesoamerican languages: while possessum stranding is possible from the complement of *V*, it is not possible
from the specifier of vP. The second was to offer a hypothesis on the nature of that restriction, by applying the insight of Aissen (1996) to the analysis of Coon (2009). According to this hypothesis, the difference lies in the selectional requirements of v and V. Beyond SMPM, this hypothesis, or a variant of it, could prove useful in thinking about how to account for structural asymmetries that were previously explained by the ECP.

REFERENCES


