Pronominal cliticization, multiple *wh*-movement, and Probe Generosity

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1. One probe, many goals Under a theory of attraction, an element (the goal) moves to satisfy the needs of a functional head (the probe). In some cases (e.g., pronominal cliticization, Anagnostopoulou 2003; or multiple *wh*-movement, Rudin 1988) multiple elements can move. This is despite the fact that the probe can be satisfied by displacing just one goal, as evinced by licit derivations with a single movable element. Call this ability, for a probe to interact with more goals than it needs to, *Probe Generosity (PG)*. While a simple observation, PG poses a fundamental mystery. If elements move only to satisfy the needs of a probe, why are apparently extraneous movements permitted? For cliticization, different answers to this question have been advanced. Perhaps the probe's needs are not completely satisfied by the first goal it finds, so it must interact with other goals (Béjar & Rezac 2009, Walkow 2012). Or, perhaps the probe interacts with all goals in parallel; no one goal, then, stops it from interacting with others (Anagnostopoulou 2005, Nevins 2011).

We advance a different view of PG: once the probe has its needs satisfied by the highest goal, as locality principles require (e.g., Attract Closest), it is free to interact other with goals, in any order, just in case they would have also been able to satisfy the probe to the same or lesser degree. Since these subsequent interactions, which do not further value the probe, are not subject to the same locality or other constraints on movement, this view of PG can simply be thought of as a more general restatement of the Principle of Minimal Compliance (PMC; Richards 1998). We show how this unification accounts for the particularly rich system of pronominal cliticization in several Sierra Zapotec languages (Oto-Manguean, Oaxaca). Unlike other conceptions of PG, it directly accounts for constraints on combinations of clitics like the Person-Case Constraint (PCC; Perlmutter 1968, Bonet 1991) in the domain of gender and their partial obviation in clusters with three clitic pronouns, as well as the attested cross-linguistic typology of such constraints.

2. Clitic pronoun movement in Sierra Zapotec In these languages, clitic pronouns are attracted from their base position to a position immediately below the verb (1a). Certain combinations are prohibited based on a four-way animacy-based gender hierarchy: ELder human > non-elder HUman > ANimal > INanimate. These *Gender–Case Constraints (GCCs)* mirror the more familiar PCCs found in Romance or Greek (in particular, the "Weak" and "Ultrastrong" versions). In Laxopa Zapotec, for instance, an animal clitic may not originate higher in the structure (as a subject) than a human clitic (as an object) (1a–b).

(1) a. Bdell**=ba'**$_1$**=b**$_2$ t_1 t_2.
hug**=3HU=3AN**
'S/he hugged it.' HU > AN

b. * Bdell**=b**$_1$**=ba'**$_2$ t_1 t_2.
hug**=3AN=3HU**
('It hugged him/her.') *AN > HU

Up to three arguments can undergo this movement, clustering in a fixed SU–IO–DO order. However, the GCC is obviated for non-initial clitics: any combination of indirect and direct objects is permitted (2a–b).

(2) a. Blo'ed=e'$_1$**=ba'**$_2$**=b**$_3$ t_1 t_2 t_3.
show=3EL**=3HU=3AN**
'S/he showed it to her/him.' EL>HU>AN

b. Blo'ed=e'$_1$**=b**$_2$**=ba'**$_3$ t_1 t_2 t_3.
show=3EL**=3AN=3HU**
'S/he showed him/her to it.' EL>AN>HU

This partial obviation of the GCC recalls PMC effects. If two *wh*Ps move in Bulgarian, their linear order reflects underlying hierarchical order (3). For questions with more *wh*Ps, the underlying highest one must still be first; the others, however, can occur in any order, no matter their base position (Pesetsky 2000).

(3) {*Kakvo$_2$} koj$_1$ {kakvo$_2$} vižda t_1 t_2?
what who what see
'Who saw what?'

(4) Koj$_1$ {kogo$_2$} kakvo$_3$ {kogo$_2$} e pital t_1 t_2 t_3?
who whom what whom AUX ask
'Who asked whom what?'

The order of Zapotec clitic pronouns is fixed morphologically (for reasons that cannot be detailed here). But, there is a similar loosening of requirements for the elements that move after the first: while the first clitic must be higher on the gender hierarchy than any that follow, subsequent clitics are not restricted in this way.

3. The proposal The similarity between Zapotec cliticization and Bulgarian multiple *wh*-movement suggests a common source, which we propose lies in PG. Assuming a probe's needs are represented as unvalued features that are satisfied through valuation by Agree, we formulate PG in (5) as a general property of probe–goal interaction. Once a probe's features are valued, it may then interact freely with other goals, possibly moving them, just in case *they would not have been able to value any more of its features*.

(5) **Probe Generosity:** For a probe P that has already Agreed with a goal G, P can subsequently interact with a goal G' iff, for all features F on G' that P needs, $F \subseteq \text{VALUE}(P)$.

To illustrate, consider (1). Assume the probe, perhaps T^0, has unvalued gender features which are organized into a geometry that reflects the gender hierarchy: $[\text{EL}] \subset [\text{HU}] \subset [\text{AN}] \subset [\text{IN}]$. The probe first Agrees with the subject clitic, which values it. In (1a), the object pronoun has a subset of those valued features, so it is able to interact with the probe without another application of Agree, thereby moving to the probe for free. In (1b), though, the object has a superset of valued features, so it may not cliticize.

Under this conception of PG, in (2a–b), the second clitic does not value the probe, and so its features have no consequence for whether the probe can interact with the third clitic or not. Therefore, the direct object is able to outrank the indirect object, as in (2b). Moreover, these subsequent interactions are, by hypothesis, not Agree relations, and so are not subject to locality constraints like Attract Closest. Thus, in (3–4), the first *wh*-phrase that Agrees with the probe and values its feature must be the highest. But the other *wh*Ps, which can interact with the probe because they have all and only its valued features, can be attracted regardless of their hierarchical position, giving rise to their variable linear order in (4).

4. Alternatives Assuming that language has only a single type of Agree operation (*pace* Anagnastopoulou 2005), two alternative conceptions of PG are possible. First is a system like Béjar & Rezac's (2009), where a probe can continue to interact with other goals just as long as some features are still unvalued after previous rounds of Agree (cf. Walkow 2012). Sierra Zapotec provides an argument against this view. If the probe is on T^0, some unvalued features would have to remain after Agreement with the first clitic for the probe to interact with subsequent clitics. But then, the clusters in (2a–b) with an EL subject should be impossible; as EL is the most featurally rich gender category, it exhausts all the probe's unvalued features. The same problem arises if the probe is on v^0; clusters with EL objects should be impossible, contrary to fact.

Second, PG might instead be taken to follow from Multiple Agree, which establishes a simultaneous relationship between a single probe and all goals in its domain (Hiraiwa 2001). To derive GCC, an additional constraint would then be needed. For analogous PCCs, Nevins (2007, 2011) proposes Contiguous Agree, which prohibits any combination in which a higher clitic lacks a feature of a lower clitic (cf. Anagnostopoulou 2005). This cannot, however, explain why non-initial clitics are exempt from GCCs (2a–b). In addition, there is nothing ruling out an inverse version of Contiguous Agree that prohibits a lower clitic from lacking a feature of a higher clitic. This would predict the existence of GCCs in which the subject could not outrank the object on the gender hierarchy. While there is variation across Sierra Zapotec varieties in the GCCs they have, as shown in (6), no such constraints are attested. (In these clitic cluster paradigms, rows represent subjects; columns, objects. A star indicates a cluster is ruled out by the language's GCC.)

(6) a. *Yalálag GCC*

	EL	HU	AN	IN
EL	✓	✓	✓	✓
HU	*	✓	✓	✓
AN	*	*	✓	✓
IN	*	*	*	✓

b. *Laxopa GCC*

	EL	HU	AN	IN
EL	✓	✓	✓	✓
HU	✓	✓	✓	✓
AN	*	*	✓	✓
IN	*	*	*	✓

c. *Zoogocho GCC*

	EL	HU	AN	IN
EL	✓	✓	✓	✓
HU	✓	✓	✓	✓
AN	✓	✓	✓	✓
IN	*	*	*	✓

5. Future prospects We have argued for a particular conception of PG: some goals get a "free ride" just in case they stand in a partial identity relationship with the valued probe. As a generalization of the PMC, this can also be motivated by economy, since it avoids extra Agree operations. One next step is to connect this theory with the broader typology of PCCs. A promising direction is to allow, as Preminger (2014) suggests, probes to search not just for individual features, but also constituents of a feature geometry. This generates GCCs and PCCs which categorically prevent lower clitics with certain features, such as the "Strong" PCC.