Constraining Optimality: Clitic sequences and Feature Geometry*
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1. Introduction

The class of phenomena included under the catchall term \textit{clitic} which may or may not turn out to be a descriptive cover term without any real theoretical content; see Wanner 1987) is highly heterogenous. It is at least plausible that some data may be more amenable to a syntactic treatment while others are more suited to a morphological treatment. The Czech clitic-climbing facts examined by Rezac (this volume), for example, would seem to be best analysed syntactically; on the other hand, a wide variety of Romance clitic sequences would seem to warrant a morphological treatment. The two research directions are clearly complementary: if I have chosen to concentrate primarily on morphologica...
also been applied successfully to other pronominal and verbal morphology agreement data (see for example Harley and Ritter 1998, Béjar 1999, 2000).

This paper is organised as follows: in Section 2, I discuss some empirical and theoretical problems which arise from Grimshaw (1997, 2001), and contrast her OT treatment with a Feature Geometric approach. In section 3, I present empirical data on variable clitic orderings which shed light on the question at hand, and which lead us to discard the notion of fixed clitic-ordering templates (or their equivalents in ALIGN constraints). In section 4, I present a specific Feature Geometry hypothesis which accounts for both standard and nonstandard Spanish clitic-ordering data, including variably-ordered clitic sequences.

2. Grimshaw’s OT accounts of clitic selection and ordering

The most complete OT accounts to date of Romance clitic phenomena are to be found in Grimshaw (1997, 2001). There are significant differences between these two accounts -- for example the former, but not the latter, has in common with Heap (1996, 1998) the use of the OCP (Obligatory Contour Principle), in interaction with other constraints, to account for certain striking clitic co-occurrence restrictions, including the notorious spurious se-facts of Spanish. There are, however, a couple of theoretical weaknesses shared by both of Grimshaw’s accounts; they suggest that the model could be strengthened by the addition of increased morphological structure.

2.1. Universal Markedness Hierarchies

Grimshaw (1997:170) gives the following Universal Markedness Hierarchies (UMHs) for Person and Case to account for clitic sequencing in Italian and Spanish in (1):1

(1) * 2 >> * 1 >> * 3
    *DAT >> * ACC

While these constraints seem to be descriptively adequate, they are simply stipulated without being motivated in any way. Is there any principled reason why we would not find rankings different from the above which target grammatical persons or cases? In the absence of some such motivating constraints, the default assumption with an OT account is that all possible rankings should be attested. This approach seems therefore to seriously overpredict the set of possible clitic orderings. A constraint (whether universal or grammar-specific) which relates the ordering of clitics to their internal morphological structure is surely preferable.

In addition, Grimshaw’s Person UMH (* 2 >> * 1 >> * 3) treats all three grammatical persons as if the SG and PL of each person were always ordered identically with respect to the other persons (an assumption which is shared by templatic accounts as far back as Perlmutter 1971). As shown in Heap (1996, 1998) and recalled below in section 3.1., this assumption is false: the SG and PL clitics for any given Person do not necessarily behave in the same way in clitic sequences. Such asymmetries require us to refer to specific combinations of Person and

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1 The UMH used by Grimshaw is, in turn, based on Noyer’s (1992) proposal; for a general critique of the UMH approach, see Harley and Ritter (1998, 2002).
Number features, something which is not possible under the UMH approach, at least as formulated thus far.

2.2. A flat feature inventory

The Clitic Lexicon of Italian which Grimshaw posits for Italian (1997:172) is displayed in (2):

(2) Clitic Lexicon of Italian

<table>
<thead>
<tr>
<th>Clitic</th>
<th>Feature Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>si</td>
<td>(R)(P)(N)(G)(C) self</td>
</tr>
<tr>
<td>mi</td>
<td>(R)1SG(G)(C) me, to me, (self)</td>
</tr>
<tr>
<td>ti</td>
<td>(R)2SG(G)(C) you, to you, (self)</td>
</tr>
<tr>
<td>ci</td>
<td>(R)1PL(G)(C) us, to us, (self)</td>
</tr>
<tr>
<td>vi</td>
<td>(R)2PL(G)(C) you, to you, (self)</td>
</tr>
<tr>
<td>lo/la</td>
<td>-R (P) SG M/F ACC him, her, it</td>
</tr>
<tr>
<td>li/le</td>
<td>-R (P) PL M/F ACC them</td>
</tr>
<tr>
<td>gli/le</td>
<td>-R (P) SG M/F DAT to him, her, it</td>
</tr>
</tbody>
</table>

R= Reflexive feature present, ( ) = unspecified value, or >= negative

The features here are Reflexive, Person (1st/2nd), Number (Sg / Pl), Gender (M/F) and Case (ACC/ DAT). Note that values can be either positive (where a feature is present), negative, or unspecified (feature is in parenthesis), thus providing a potentially ternary opposition which was exploited by Grimshaw (1997 but not 2001). Grimshaw appears to assume without comment the same clitic lexicon for Spanish, mutatis mutandis (i.e. no other Clitic Lexicon is provided specifically for Spanish) despite the fact that Spanish has no equivalents of either the Italian locative clitic ci or the Italian partitive clitic ne. Although much of what I propose below may be applicable to Italian si (and indeed, to other Romance clitics), I will only be explicitly referring to Spanish clitics such as se. As Grimshaw points out (1997:172) the most interesting clitic in this analysis is si, the clitic which is usually described as a reflexive clitic. In this view it is really no such thing. It is a clitic with no properties. While I find it more useful to think of se as a clitic with no features, or perhaps, with the minimum of features (i.e. the maximally underspecified clitic), I am in basic agreement with Grimshaw’s (1997) position that featural underspecification is the primary property of this clitic. In contrast, Grimshaw (2001:207) takes the position that clitics such as si (and presumably Spanish se) must be positively specified as +R[eflexive] (although she later vacillates on this same point, referring to it as the still-remaining clitic si, which has no properties. This use of binarism plus underspecification leads to a (potentially overgenerating) ternary opposition, where se is +R, third person clitics are -R, and first and second person clitics are unspecified for reflexivity (R). As we shall see below, privative monovalent features in fact provide a much more constrained framework, with no need to refer to the feature Reflexive at all.

Grimshaw also claims (1997:172) that her proposed Clitic Lexicon as shown here in (2) is the essence of the proposal of Bonet (1995), slightly rephrased. Crucially, what is lost in this rephrasing is the morphological Feature Geometry for clitics which is at the core of Bonet’s dissertation (1991), and, in a modified form, her (1994, 1995ab) articles. Thus what is missing in Grimshaw’s Clitic Lexicon in (2) as well as in her (2001) rephrasing are the implicational
relations provided by a hierarchical structure of a Feature Geometry of the type which Bonet proposes. Instead what we have in (2) is a flat (i.e. unstructured) list of featural specifications, or feature bundles in which se has just as many specifications as each of the other clitics. Each clitic in Grimshaw’s Romance Clitic Lexicon must have five featural specifications, even though in less-marked clitics some of these may in fact be non-specifications, i.e. the absence of a feature. In contrast, a Feature Geometry would represent such featural non-specifications as exactly that: absent features. Under a Feature Geometric approach markedness is reflected directly in the morphological representation: the most unmarked (maximally underspecified) clitic is also the clitic with the least morphological structure. This reflects Bonet’s treatment of markedness: the more complex in number of nodes the structure of a clitic is, the more marked it is (1991:16). This view of markedness has been reflected in other work, for example by Harley (1994), Harley and Ritter (1998, 2002), Rice (1999), Pirvulescu and Roberge (2000), and Bruhn de Garavito, Lamarche & Heap (2002). In contract, Grimshaw’s rather counter-intuitive approach reverses this view of markedness, treating the clitic with the fewest properties and thus the least structure (Italian si, Spanish se) as the most marked clitic (2001:208).

2.3. Fault lines in Grimshaw’s lexicon

As Grimshaw herself notes (1997:172), there are some significant fault lines in her Clitic Lexicon which involve the R(exflexive) and P(erson) specifications. Furthermore,

[t]he two fault lines, the R and P specifications, are connected. Apart from si, all and only (R) clitics mark person. Apart from si, all and only -R clitics are (P). Other generalisations hold, but will not be analyzed here: for example, all and only (R) clitics are (G) and (C), so the (R) clitics don’t vary for gender and case and the -R clitics do. (1997:172)

What is unsatisfactory here is that such fundamental generalisations about Romance clitics should be presented as some kind of coincidence about these particular inventories, or as an external stipulation about the features in a Clitic Lexicon. If this is possible, one has to ask why we do not find, for example, another system where all and only P(erson) clitics are specified for G(ender) and all and only N(umber) clitics are unspecified for C(ase). Such a clitic lexicon is of course unattested among Romance pronoun systems, but Grimshaw’s (1997, 2001) approach seems to predict that it should be just as likely as the attested clitic systems. In Grimshaw (2001) she proposes that the featural specifications of the Clitic Lexicon can in fact be derived from a constraint hierarchy, one which uses markedness constraints to ban certain combinations of features. On this view, the unanalysed generalisation described above is expressed by a conjoined constraint with the form MARK 1ST/2D & REF/GEN/CASE, which in turn is ranked above the constraint FAITH REF/GEN/CASE, which requires the preservation of these features. But this approach simply pushes the stipulation back to another level: why is this particular combination of features marked, and why does the constraint banning this combination outrank the constraint preserving them? Under basic assumptions of the OT framework, we would expect that the reverse ranking should occur in some grammar somewhere, but there in no suggestion in Grimshaw (2001) of where such a derived Clitic Lexicon might be attested.

A more satisfactory analysis would of course be one in which the co-occurrence restrictions between different features fall out directly from the morphological representations of
the clitics themselves, and do not have to be stipulated by markedness constraints or by their ranking. As it stands, neither Grimshaw’s (1997) Clitic Lexicon nor her (2001) derived Lexicon predict, for example, what combinations of featural specifications are likely to be attested and which are not: in principle, all possible combinations of features (or of clitics) are presumably equally likely (a prediction clearly not borne out by the attested Romance clitic facts).

3. An empirical detail: Clitic sequences are not always fixed

Like virtually all previous accounts of clitic sequencing since Perlmutter (1971)\(^2\), as well as most descriptive grammars, Grimshaw’s analyses rely on one crucial factual assumption: that fixed, invariant order is a necessary property of clitic sequences. This assumption is almost, but not quite, correct: in the overwhelming majority of cases attested, clitic sequences appear in such a fixed order. There are however a few grammars which tolerate variable clitic orders (see Hetzron 1977, Todolí 1995, Wanner 1996), but even in these cases, the variable orders still only occur with a small number of (combinations of) clitics. The fixed-order generalisation is so close to being categorically true that it is hardly surprising so many linguists have idealised away from this pesky problem by sweeping it under the rug (or simply not noticed it), and dealt with only invariably fixed-order clitic sequences without taking into account variable sequences.

But what exactly is the (theoretical or empirical) significance of a phenomenon which is doubly marginal, in that it occurs in a small minority of forms, in a small minority of grammars? For strictly categorical models of grammar, such data are quite problematic: as shown in Heap (1996, 1998), neither a syntactic movement account nor a templatic output filter can deal satisfactorily with a grammar which admits data such as those below in (3). Here, in each case the nonstandard a. forms alternate freely with the standard Spanish b. forms:

\[ \begin{align*}
(3)i. & \quad a. \quad \text{El globo } me \text{ se escapó de la mano.} \\
& \quad b. \quad \text{El globo } se \text{ me escapó de la mano.}
\end{align*} \]

\[ \begin{align*}
& \quad \text{The balloon got away from my hand. =}
\end{align*} \]

\[ \begin{align*}
ii. & \quad a. \quad \text{El hígado lo como frito, pero en el arroz } me \text{ se queda en la garganta.} \\
& \quad b. \quad \text{El hígado lo como frito, pero en el arroz } se \text{ me queda en la garganta.}
\end{align*} \]

\[ \begin{align*}
& \quad \text{Liver, I can eat it fried, but in rice it sticks in my throat. =}
\end{align*} \]

\[ \begin{align*}
iii. & \quad a. \quad \text{Su nombre } me \text{ se olvidó.} \\
& \quad b. \quad \text{Su nombre } se \text{ me olvidó.}
\end{align*} \]

\[ \begin{align*}
& \quad \text{forgot her/his name. =}
\end{align*} \]

\[ \begin{align*}
iv. & \quad a. \quad \text{La naranja } me \text{ se cayó.} \\
& \quad b. \quad \text{La naranja } se \text{ me cayó.}
\end{align*} \]

\[ \begin{align*}
& \quad \text{The orange fell down. =}
\end{align*} \]

\[ \begin{align*}
v. & \quad a. \quad \text{Si no riego, } me \text{ se seca todo.} \\
& \quad b. \quad \text{Si no riego, } se \text{ me seca todo.}
\end{align*} \]

\[ \begin{align*}
& \quad \text{I don’t irrigate, everything dries up on me. =}
\end{align*} \]

\(^2\) See Heap and Roberge (2002) for an overview of treatments of clitics over the last three decades.
vi.  a. La he atado para que no te se caiga.
b. La he atado para que no se te caiga.
🌟 tied it so that it wouldn’t go and fall.🌟

vii. a. Si soplas al fuego, igual te se apaga.
b. Si soplas al fuego, igual se te apaga.
🌟 if you blow on the fire, it may go out on you.🌟

These data are from rural Murcian (a Castilian-based southern Spanish variety akin to Eastern Andalusian), but analogous forms can be found in many other regional varieties of Spanish (see for example Atlas Lingüístico de la Península Ibérica, Heap 2002c, also Alvar et al. 1979-1983). This inversion or clitic metathesis has been a feature of nonstandard varieties, in both Spain and Latin America, for several centuries at least (see Martín Zorraquino, 1979: 347-352; Heap 2004, forthcoming), and it is sufficiently widespread to be condemned by prescriptivists: «En el habla vulgar se oye con frecuencia Me se cae la capa, Te se ve la intención; pero esta construcción es estimada en todas partes como solecismo plebeyo.» (Real Academia Española 1973:427). While other cases of variable clitic orders are attested in Romance (see for example Hetzron 1977), the data in (3) will suffice to illustrate the relevant aspects of variable-order clitic sequencing.

3.1. Number asymmetry

What makes the data in (3) so challenging is that this ordering variation is restricted to the 1SG and 2SG: neither 1PL nor 2PL can occur before se, as shown in (4):

(4)i. a. Se nos van los jóvenes.
   b. * Nos se van los jóvenes.
🌟 the young people go away on us.🌟

ii. a. Se os van a quedar pequeños.
   b. *Os se van a quedar pequeños.
🌟 they are going to stay small on you (2PL familiar).🌟

3 I assume herein that all the forms in (3) are produced by the same grammar. This assumption reflects the context of elicitation (the same subjects freely produced type a. and type b. forms in the same contexts). It is of course possible to posit that these subjects in fact possess two parallel grammars, one which produces se te, se me and the other te se, me se. While such a dual grammar proposal might work formally, it is a less interesting option theoretically. We can always posit multiple grammars and code-switching as a last resort: the more challenging project is to construct a formal model which allows for exactly the attested range of variation within one grammar. It should be noted that these variable orders, though superficially similar, are in fact quite distinct from the classic ILLUM MIHI > MIHI ILLUM cluster switch, as discussed by Desouvrey (this volume) and Nicol (this volume), among many others. The data of interest here participate in synchronic variation, whereas the (Old) Romance cluster switch is primarily a diachronic phenomenon (but see Heap and Kaminskaïa (2001) for a geometric account of synchronic cluster variation in French dialects).

4 Forms with os are actually quite rare in some of the relevant varieties: in rural Murcian, for example, reflexive os tends to be replaced by se in all contexts (Vosotros se vais, se sentáis, etc.), a syncretism which is predicted by Bonet’s (1991:28) typology of reflexive syncretisms. The sequence which would hypothetically result here (?
* Se se van a quedar pequeños) is not to my knowledge attested anywhere, and seems implausible in any variety of Spanish.
This observed restriction is borne out by the descriptive literature on the subject:

> El se pospuesto: Es general el vulgarismo, que incluso se prodiga en medios sociales algo elevados, de posponer el se a las formas átonas personales: me s'ha caído, Te se vale! ... Pero esta posposición incorrecta sólo se da cuando dichas formas átonas están en singular; nunca alcanza al plural: se nos quedó muerto (y nunca nos se quedó muerto). (García Martínez 1986: 117)

It has been suggested (by Eulàlia Bonet, p.c.) that this apparent number asymmetry (clitic inversion = being possible with 1sg and 2sg, but not with the corresponding plurals) is in fact a phonological antigemination constraint which avoids the sequence of identical segments in /(n)os#se/. Apart from the general undesirability of making phonological information available to the morphology, I find this explanation unsatisfactory on phonological grounds. While Spanish does not in general favour geminate consonants, all standard and nonstandard varieties distinguish forms like (5)a., with a bimorphemic geminate /n#n/ sequence, from forms like (5)b, without such a sequence:

(5)  

<table>
<thead>
<tr>
<th></th>
<th>Mándennos noticias.</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Send (2PL formal) us news. =</td>
</tr>
<tr>
<td>b</td>
<td>Mándenos noticias.</td>
</tr>
<tr>
<td></td>
<td>Send (2SG formal) us news. =</td>
</tr>
</tbody>
</table>

However this distinction is realised phonetically, it is clear that there is no phonological constraint having the effect of a general ban on bimorphemic geminates in Spanish. If *nos se and *os se are to be excluded on phonological grounds, it would have to be by means of a constraint specific either to sibilants, or to the domain of clitic sequences (rather than to the juncture between a verbal desinence and a clitic, as in (5)a). Rather than go to such ad hoc lengths, it seems preferable to seek a principled, non phonological mechanism capable of blocking *nos se and *os se while allowing me se and te se.

This number asymmetry also strengthens the case against both surface templates and syntactic movement accounts of clitic ordering. In order to account for forms such as those in both (3) and (4), a syntactic movement account would have to include an optional movement rule which could affect only me and te, but not nos and os. A templatic account would have to include a disjunctive optional ordering, in which te and me could appear either before or after se (but not both), while their plural counterparts could only appear after se. Both of these solutions seem sufficiently implausible to motivate a continued search for an alternative.

Optimality Theory could perhaps provide such an alternative account of variable orders, but only if we can motivate the SG ~ PL distinction in terms of structural markedness. As Grimshaw points out in her treatment of Floating Number (1997:189), there are clear markedness relationships between pairs like singular and plural (as there are between masculine and feminine, or accusative and dative), but she makes no attempt to represent these markedness relationships in her proposed Clitic Lexicon other than by stipulation.⁵ If however we can build

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⁵ Grimshaw (2001:219-220) proposes that Murcian data like those in (3) correspond in fact to an inversion in her constraint hierarchy, in which PERSONLEFT >> PERSONRIGHT; but this analysis is inadequate for two reasons. First,
these markedness relationships directly into the morphological representations themselves, then perhaps, in order to obtain the attested clitic sequencing effects, the $SG \sim PL$ opposition could be exploited in an OT framework.

Of course, we would like to retain the descriptive generalisation that clitics almost always appear in fixed orders, and that variable orders are highly-marked phenomena. Such near universals, while problematic for strictly derivational (syntactic or templatic) accounts, are a natural outcome of a theory which allows constraint violation. Thus, from a theoretical perspective, variable clitic orders could provide support for an OT approach over the available alternatives; from a methodological perspective, they serve as a reminder that marginal or marked data can be crucial in evaluating competing analyses, and should not be idealised too quickly out of the picture.\(^6\)

3.2. Theoretical and Empirical Desiderata

An improved account of clitic ordering would therefore include (at least) some motivation for the ordering constraints formulated by Grimshaw as the UMHs in (2), and some internally hierarchised morphological structure for clitics that reflects markedness relations. This morphological structure for clitics should embody the fault lines in clitic inventories evoked by Grimshaw, but without simply resorting to stipulation. In addition, whichever constraints determine clitic orderings should also allow for some, but not completely unconstrained, variation in clitic sequences. Recent proposals for a morphological Feature Geometry can be adapted to satisfy all of these desiderata.

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\(^6\) Another example of such a near universal is Bonet’s generalisation that “nontransparent output forms will have the same surface form as other clitics of the language instead of becoming an arbitrary phonological sequence.” (1991:2-3). There exists a small number of exceptions to this generalisation, i.e. cases where the output sequence is not made up exclusively of other clitics from the inventory of the same language, such as the Old Spanish $le + lo > gelo$ (cf. Heap et al. 1993). But this generalisation is otherwise quite robust, and thus constitutes an ideal candidate for the type of near universals which flow naturally from a theory of violable constraints. Note also that the Old Spanish gelo facts invalidate Grimshaw’s claim (2001: 237, note 11) that such a “specialised” clitic cannot occur.
4. A Feature Geometry for Spanish Clitics

The particular proposal made here is a hybrid which combines elements of Bonet (1991, 1994, 1995ab) Feature Geometry for clitics with Harley and Ritter (1998) Feature Geometry for number and gender paradigms. Specifically, I retain Bonet’s use of a CASE node (which is absent in Harley and Ritter’s model), but I assume CASE is a daughter of Harley and Ritter’s CLASS node. The internal structure of the OTHER node is a simplified version of Harley and Ritter’s geometry, and CL replaces their root node, Referring Expression (since the clitic inventory includes anaphorics like se, which are clearly not REs). Thus, the overall Feature Geometry proposed here for Spanish clitics has the structure in (6):

\[
(6) \quad \text{CL} \\
| \quad \text{PARTICIPANT} \quad \text{OTHER} \\
| \quad [\text{speaker}] \quad [\text{group}] \\
| \quad \text{CLASS} \\
| \quad \text{GENDER} \quad \text{CASE} \\
| \quad [\text{feminine}] \quad [\text{dative}] 
\]

The terminal nodes in this geometry are monovalent privative features while the nodes in small caps are organisational Major Class nodes. Most of Harley and Ritter’s claims regarding this type of geometry in general are also applicable here, specifically:

\[
(7) \quad \text{i. Cross-linguistic variation and paradigm-internal gaps and syncretisms are constrained by the hierarchical organization of features in the universal geometry.} \\
\text{ii. The interpretation of sub-trees of the geometry may be relativized in tightly constrained ways so that language-specific interpretation of a given feature will depend in part upon the contrasts available within the feature system of that language. (1998: 1, 2002:482)} 
\]

As Ritter (1997) points out, such a geometry can in principle permit either an unmarked second person (if the feature Speaker is specified) or an unmarked first person (if the feature Addressee is specified): here the former is chosen, for reasons which will become apparent below.

While Harley and Ritter’s feature geometry is proposed as a universal representation made available by the language faculty, and they both base it on and test it against an impressive cross-linguistic survey of pronominal and agreement systems, it also corresponds rather close to what we find in Romance clitic systems. In general, the split between PARTICIPANT and OTHER corresponds to a distinction made since at least Bloomfield (1933) and Benveniste (1956) between real persons (first and second persons) and non-persons (third persons). This split also

\[
^7 \text{My proposal in (6) omits some of the CASE feature nodes proposed by Bonet (which are necessary for Catalan but not for Spanish) and a number of the nodes proposed by Harley and Ritter (Group | Minimal, for example, which they propose in order to account for duals, is not required here). Desouvery (this volume) proposes an alternative hierarchical representation which relies more heavily on case than either the present analysis or those cited here.}
\]
neatly captures the fact that in Romance, first and second person clitics are not inflected for
gender (and usually not for case), while third person clitics are typically marked for both. This
interrelation of features, which needs to be stipulated in Grimshaw's Clitic Lexicon, becomes a
straightforward consequence of the geometry under the view adopted here. The geometry in (6)
and the claims in (7) also reflects some of the widely-shared assumptions about markedness
alluded to above, in particular, the principle that markedness correlates with *structure*: more
complex structures are more marked, less complex structures are less marked (Rice 1999;
Pirvulescu and Roberge 2000).

To return to Grimshaw's (1997) observation that all and only Person clitics lack a
specification for Reflexive, we see that under this account reflexive is in fact a non-
specification, and not a positive feature as proposed in Grimshaw (2001). In fact, under this
analysis *se* is the least marked clitic and correspondingly has the least morphological structure.
Clitics with a Participant specification (such as *me, te, nos*) may be interpreted as anaphoric (if
they are preceded by an argument which matches this Participant specification), but they need
not be: they can also be interpreted as pronouns, in the absence of such an antecedent. Clitics
under the OTHER node which have CASE and GENDER specifications cannot be anaphoric, but
will be interpreted as pronouns, and seek antecedents or discourse referents with corresponding
features (see Bruhn de Garavito, Lamarche & Heap 2002). On the other hand, our one true
reflexive *se* crucially has no PARTICIPANT specification, and therefore can act as anaphor for
any preceding argument also lacking a PARTICIPANT specification. The apparent binding
properties of these different clitics thus follow directly from their respective morphological
specifications, and there is no need to specify a feature [reflexive] anywhere.8

Assuming the Feature Geometry in (6), a partial inventory of Spanish clitics required to
account for the variable ordering data above is given in (8):

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8 A further advantage of eliminating the feature [Reflexive] is that it permits a unified representation for other uses
of *se*, some of which are incompatible with a reflexive specification. For example, in the pseudo-passive *Aquí se
habla español*, underspecified *se* corresponds to a generic (pro-arb) subject which is compatible with the clitic with
no features but not with a [+Reflexive] specification (see Bruhn de Garavito, Lamarche & Heap 2002 for details).
(8) Partial clitic inventory for standard Spanish

\[
\begin{array}{c|c|c|}
\text{CL} & \text{CL} & \text{CL} \\
\hline
\text{PARTICIPANT} & \text{PARTICIPANT} & \\
\hline
\text{[speaker]} & \text{me} & \text{te} & \text{se} \\
\hline
\text{CL} & \text{CL} & \text{CL} \\
\hline
\text{OTHER} & \text{OTHER} & \text{OTHER} \\
\hline
\text{CLASS} & \text{CLASS} & \text{CLASS} \\
\hline
\text{GENDER \ CASE} & \text{GENDER \ CASE} & \text{GENDER \ CASE} \\
\hline
\text{[feminine]} & \text{[dative]} & \\
\hline
\text{lo} & \text{la} & \text{le} \\
\end{array}
\]

Note that all these clitics can be pluralised by adding the feature \([\text{group}]\) under the \text{OTHER} node.
5. **Linearizing the geometry**

Before considering the more specific question of how to achieve variable clitic orderings like those in (3), we need to consider the more general problem of how clitics are ordered linearly in the normal or fixed standard Spanish sequences. While ALIGN constraints can be used to achieve the desired orders (see Anderson 1995, 1996, as well as Grimshaw 1997, 2001), such an approach radically overpredicts: freely reranking ALIGN constraints predicts that all possible ordering permutations should occur, and thus, in effect, makes no prediction at all. Instead I retain the constraint proposed in Heap (1996, 1998:240), as given in (9):

(9) **LEAST LEAFY TO THE LEFT (LLL):**

Arrange clitics from the morphologically least specified to most specified.

The intuition behind this constraint, which echoes James Harris' generalisation of syncretism before contrast (1995:189), is that the linearisation of clitics corresponds to a sort of crescendo effect beginning with the least morphological specification and ending with the most. Or as Harris puts it (45) [= (9) here] has an arboreal interpretation as well. Given the conventional assumption that nodes without dependents are not present in geometrical representations [...], left-to-right order in clitic clusters corresponds to increasing tree size and leafiness. While originally postulated with reference to a feature representation which differed considerably from the Feature Geometry advanced here, the LLL constraint still holds under the present account, and has the merit of being (at least) descriptively adequate. In addition, the LLL constraint relies on morphological information must be supplied anyway, and on markedness relationships, a desirable addition to any model of grammar unfortunate enough not to have them already.

The LLL constraint in (9) and the clitic inventory in (8) combine to provide just the clitic orders attested in standard Spanish, as shown in (10), where se, the least specified clitic, must precede all other clitics:

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9 ALIGN constraints can even be crucially unranked if so desired, in order to achieve attested variable orders (see Heap 1998:233-234), but again, this formal possibility predicts nothing.

10 A similar intuition seems to be behind John Harris (1994:170-173) Complexity Constraint whereby subphonemic elements are organised linearly according to the slope of their degree of complexity (a connection which I am indebted to Stephanie Kelly for helping me to see). It may turn out that such observationally adequate generalisations about complexity slopes correspond in fact to processing effects (i.e. the least complex element being the easiest to hold in memory for longest), but the formal parallelism with e.g. sonority hierarchy effects in syllables remains nonetheless striking.

11 It should also be noted that this constraint seems to hold in Romance varieties which have more clitics in their inventory than Spanish, and those which allow longer strings: although the French and Catalan data are not treated here, both these languages have locative clitics (y or hi) and a partitive clitic en, which would necessarily have additional Case features and which also come later in clitic sequences, as predicted by the LLL constraint.
a. El globo se me escapó de la mano. (=3ib)
   The balloon got away from my hand.

b. Si soplas al fuego, igual se te apaga. (=3viib)
   If you blow on the fire, it is just as likely to go out on you.

c. Buscó la pala y se la trajo a la casa.
   She looked for the shovel, and brought it home with her.

d. No se le habla así a la mamá.
   One does not speak that way to mum.

This same constraint also accounts for the relative order of person and non-person (i.e. third person) clitics. All PARTICIPANT clitics have less specification than the least specified third person clitic, lo, and thus must always precede it, as well as all other third person clitics (which have even more specification):

a. Te lo daré mañana.
   I will give it to you tomorrow.

b. Me las traje en el maletín.
   I brought them with me in my briefcase.

Finally, the LLL constraint ensures that te will always precede me, and not vice-versa, since the latter has more featural specification, cf. (8). The ordering contrast in (12) would require a special stipulation or constraint under other accounts:

a. Te me has hecho grande.
   You have grown up on me.

b. *Me te has hecho grande.
   *You have grown up on me.

Not all Spanish speakers accept forms like (12)a, but where this combination of persons is possible, (12)a. is definitely preferred to (12)b, a stipulation which Harris (1995:188) expresses as a filter:

*[[1per]-[2per]]

Under the present account, this ordering contrast flows naturally from the status of 2SG as the unmarked Participant in the geometry in (6), thus motivating the choice of [Addressee] rather than [Speaker] as the default PARTICIPANT.12

Thus the interaction of the LLL constraint in (9) and the Spanish clitic geometry in (6) will result in all and only the orders predicted by Perlmutter (1971) template, reproduced here in (14), or any of the notational variants proposed since (e.g. Harris 1995; Wanner 1996):13

12 I have suggested elsewhere (Heap 2002a), for independent reasons, that 2SG is the unspecified Participant in variable Gallo-Italo-Romance subject clitic paradigms.

13 Like all previous templatic treatments I am aware of, the present account has the drawback of slightly overpredicting, in that it allows for sequences such as *? se te me, or even *?? se te me la; the latter of which is ungrammatical for most if not all Spanish speakers, while the first may be acceptable to some (cf. Cuervo 2001). This may be a case where, in addition to constraints on ordering, grammars vary with respect to the length of clitic sequences which they permit.
Inasmuch as it allows us to dispense with stipulative ordering statements such as the UMH shown in (1) or the many markedness constraints required to derive a lexicon like the one in (2), not to mention the numerous ad hoc Align constraints used by Grimshaw (1997, 2001), the present account of standard Spanish clitic sequencing is simpler than preceding proposals, and therefore preferable. While still ultimately descriptive, the present analysis reduces the number of required stipulations to a minimum by relying on a Feature Geometry with robust and independent motivation (see Heap 2002ab among others).

5.1. Variable clitic orders

Since the interaction of the LLL constraint in (9) and the Feature Geometry in (6) provides an analysis for standard Spanish clitic ordering which is equivalent, or superior, to previous accounts, then we can turn our attention to the thornier question of nonstandard (variable) clitic orders. The problem is not just how to get variation: this is relatively straightforward once we allow either unranked constraints (Heap 1996, 1998) or Floating Constraints (Reynolds and Nagy 1994; Reynolds and Sheffer 1994; Nagy 1996; Nagy and Reynolds 1997). The real challenge is to allow for all and only the attested range of variation in clitic ordering. Such variation may indeed arise as a result of underspecification: as Anttila suggests variation emerges in environments where the grammar underdetermines the output.

The relevant question therefore becomes: which of the clitics from the inventory in (8) can be variably underspecified? It seems unadvisable to fiddle with the specifications of me and te, since the contrast in (12) depends on the latter being less specified; on the other hand, if se is the least specified clitic, then how can its featural specification vary? The key here is to realise that the maximally underspecified representation of se in (8) gives all the featural information that is required by se: in order to be interpreted as an anaphoric, this clitic must not have any specification for Participant. There are however other features in the geometry which, although not strictly required by the anaphoric clitic, are nonetheless compatible with it. In addition to the bare CL root node, se may in fact have the feature CLASS, and / or OTHER. In other words, the possible geometrical representations for se include:

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14 A similar but independent analysis (Tosco 2002) has shown that feature geometric representations help shed light on variation and change in subject clitic paradigms throughout the Cushitic family of languages.

15 This featural variability is reminiscent of Wanner’s (1996:33) observation regarding his proposed “Two Term Sequencing Patterns” or binomios de secuencialidad: “Lo propio de los binomios de secuencialidad es su libre combinación para producir efectos locales, en principio variables según hablantes, registros, regiones y períodos.”
Notice that under (15)ii. se has the same amount of specification as te in (8), and under (15)iii. se has the same amount of specification as me in (8): this means that when they are linearly ordered by the LLL constraint in (9), there can in effect be a tie between se and te, or between se and me. In the event of equal featural specification, the LLL constraint correctly predicts that both orders will surface, variably. Crucially, in all cases se still has less featural specification than any of the other clitics which must follow it (plural nos, os, and any of the third person clitics).

It may seem redundant or even ad hoc for me to postulate that the same clitic se can in fact correspond to different morphological Feature Geometries, but let us not forget that this hypothesis is proposed for highly marked grammars. In the unmarked grammar (for standard Spanish, and the majority of modern nonstandard varieties as well), se corresponds only to the minimum featural specification it requires, i.e. the one in (15)i, and thus does not cause variably-ordered sequences. But there is a gap between the features it requires and those with which it is compatible: it is precisely this morphological space which allows for the variable nonstandard specifications in (15)ii. and iii., and thus for the ordering variation attested in (3).\footnote{One interesting consequence of this hypothesis is the prediction that there should be grammars where se corresponds to just (14)i. and ii., and not (14)iii., which would mean that we would expect to find varieties where se te and te se alternate, but not se me and *me se. Recent empirical research using dialect atlas data from nonstandard Peninsular varieties (Heap 2002c, 2004, forthcoming) strongly suggests that while te se can occur with or without me se, the inverse is not true: the presence of me se in a grammar necessarily implies that te se is already present.}

6. Conclusions

Within the rich spectrum of Romance clitic phenomena, there are many clitic sequencing phenomena for which Optimality Theoretic analyses are at least as satisfactory as previous accounts, if not more so. For example, the treatment of spurious se facts as an OCP violation (Grimshaw 1997, 2001) is more insightful than previous accounts, which treated this rule as an ad hoc stipulation, and it compares favourably (in terms of economy) to the case-based account proposed by Desouvrey (this volume). There are a wide range of clitic phenomena which can be analysed in a similarly constrained OT framework: Bonet’s (1994) treatment of the Person-Case constraint comes to mind, as well as the interaction of constraints on the length of clitic sequences and the Avoid Pronoun Strength constraint. What I have shown in this paper is that, in addition to a theory of constraint interaction and violation, we need a theory of hierarchical morphological representation which can allow for variable underspecification.

The Feature Geometry proposal presented here can capture both standard and nonstandard Spanish clitic ordering facts, without either ignoring marginal data or resorting to ad hoc stipulations. Related work (Heap 2002ab) has shown that Feature Geometry can usefully
account for the variable third person object clitic paradigms in geolectal varieties of Spanish and in partial paradigms of subject clitics in Italo-Gallo-Romance and elsewhere (Tosco 2002). If this type of account is correct, then further research is required to discover whether constraints involving structural markedness (Béjar 1999, 2000) can help shed light on other clitic ordering phenomena.

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