

Differential Possessor Expression:
Are Pair-Wise Comparisons Ever Required?

M.C. O'Connor

Boston University

Proceedings of the LFG03 Conference

University at Albany, State University of New York

Miriam Butt and Tracy Holloway King (Editors)

2003

CSLI Publications

<http://csli-publications.stanford.edu/>

Abstract: Accounts of clause-level phenomena such as inversion and obviation (Aissen 1997, 1999) make crucial reference to the relative ranking of two arguments, subject and direct object, on a person/animacy/discourse hierarchy. Are such pair-wise comparisons ever required within the NP? O'Connor (1999a,b) proposed an analysis of NP-internal case-marking of possessors in Northern Pomo that paralleled Aissen's analyses of clause-level phenomena. An OT analysis employing harmonic alignment and local conjunction yielded universal constraints on pairings of possessor and possessum, ranked on a hierarchy of NP form (pronoun, proper, common). This paper proposes an alternative analysis of the Northern Pomo data, one that does not require universal constraints on the NP forms of pairs of possessors and possessa. In this reanalysis, I find evidence of another parallel between the clausal and NP levels of structure: absence of case-marking on possessors of kinship nouns in Northern Pomo is explainable as a result of functional uniqueness: kinship stems display an obligatory pronominal prefix that acts as an incorporated pronoun, fulfilling the possessor argument requirement of the kinship stem and blocking the possibility of a case-marked possessor inside the possessive NP. This parallels clause-level subject pronominal incorporation in Chichewa (Bresnan & Mchombo 1986). Finally, pair-wise comparisons are shown to figure in yet another kind of differential possessor expression: the phenomenon of 'genitive promotion' as described in Nez Perce (Rude 1986b).

1. Introduction

In many languages there are at least two constructions available for the expression of possession and related semantic functions. The contrast between the English Saxon genitive (*the ship's captain*) and the "of" genitive (*the captain of the ship*) is a well-known case in point, but many Indo-European and non-Indo European languages display what I will call "differential possessor expression" (DPE). A survey of the factors determining speakers' choice of construction in languages with DPE leads quickly to an obvious question. Is the choice between constructions a function of some feature of the possessive modifier (*the ship*) or the possessum (*the captain*) or of some relation between the two? In the case of the English alternation, at least some analysts have proposed that the choice is determined by the relative animacy of possessor and possessum (Hawkins 1981, Taylor 1996, Anschutz 1997). In other words, the choice is determined not by simple specification of feature values for one argument, but by a pair-wise comparison of the head (possessum) and modifier (possessor).

This question is of interest beyond explorations of differential possessor expression. Some recent work in clause-level typology formalizes grammatical options that crucially refer to pair-wise comparisons of arguments. For example, in studies of obviation and inversion (Aissen 1997, 1999), an adequate description of the phenomenon in question must make crucial reference to the *relative* status of two arguments with respect to some feature. For example, in Nocte inversion (as described by Delancey (1981)), an inverse marker on the verb is triggered when the direct object argument outranks the subject argument in the person hierarchy 1>2>3. In obviation systems, the argument marked 'proximal' outranks obviative arguments in terms of discourse prominence (a feature that must be further defined within the specific language). In phenomena such as these, morphosyntactic marks (such as verbal inflection, case-marking, or other devices) indicate a departure from the unmarked values for animacy and/or discourse status, as proposed early on by Silverstein (1976). For obviation and inversion, in Aissen's analysis, a pair-wise comparison is necessary: e.g. in Nocte, not all 3rd person subjects trigger inversion marking; only those that appear with 1st or 2nd person objects.

In contrast, there are morphosyntactic alternations that are triggered by the values of animacy or discourse features in only one argument, not a pair. For example, in differential object marking (DOM; Aissen 2001, building upon Bossong 1985), direct objects receive case-

marking based not on their status relative to the subject, but on an absolute criterion level of definiteness, animacy, specificity, etc.

Do these same kinds of morphosyntactic alternations, reflecting markedness values, occur within the noun phrase? Structural and semantic parallels between the noun phrase and the clause have been pursued in various ways for decades (Chomsky 1970, Jackendoff 1977, Abney 1987, Bernstein 2001), with many citing an explicit parallel between the clausal subject and the prenominal modifier, the ‘subject’ of the NP. However, with the exception of Aissen 1997, little work has been done on the parallels between clauses and NPs with respect to the workings of the person/animacy hierarchy and its reflection in morphosyntax.

What would such parallels between the clause and the NP look like? At the clausal level, choice of inverse or direct verbal marking requires us to consider the relative status of subject and direct object. If indeed choice of possessor construction requires that we consider the relative status of possessor and possessum, and if indeed the possessor parallels the subject in outranking other grammatical functions inside its domain, then we might expect to find languages in which a possessor that is lower in animacy than the possessum head would receive morphosyntactically marked expression. We might also expect to find cases in which the relative discourse status of possessor and possessum would play a role in speakers’ choice of expression.

On the other hand, clause-level phenomena like DOM require that the status of only one argument be compared to a criterion level on some scale, e.g. animacy or specificity or definiteness. If differential possessor expression is like differential object marking, it may be that the only relevant consideration is the status of the possessor argument on a person or animacy or discourse status scale: morphosyntactic choices would depend only on the features of the possessor.¹

In any case, the topic holds potential descriptive and theoretical interest. An exploration of morphosyntactic alternations at the NP level may show Aissen’s clause-level proposals to be of even greater general interest. On the other hand, if no such pair-wise comparisons are found to be necessary at the NP level, we will potentially have learned something of interest about differences between nominal and clausal structures and functions. Finally, there are implications for theory-internal issues in Optimality Theory, the framework within which Aissen has formalized the clause-level grammatical phenomena mentioned above. The OT constraints that Aissen uses to select among candidates in the cases of inversion and obviation must represent the required pair-wise comparisons. Because constraints proposed in OT analyses have the status of universals, these constitute a claim about typological parameters of variation.

In the remaining sections of this paper I will consider the question posed in the title, presenting data from two Native American languages that appear to require pair-wise comparisons of the head and modifier nominals. The first set of data are from Northern Pomo, an indigenous language of Northern California. In O’Connor 1999a and 1999b I argued that the correct analysis of case-marking data within possessive NPs in Northern Pomo required a set of

¹ Some semantic features of the possessum (head of the NP) may play a role in choice of expression, most prominently *relationality*, as suggested by Barker (1995). Mirto (1998) considers the broader relation of *meronymy*, which is grounded in the semantics of the head. However, virtually all proposed explanations that focus on *animacy* or *discourse* features consider only the possessor or pair-wise comparisons of possessor and possessum. Initial corpus-based study of approximately 7,000 examples (O’Connor et al. 2004) has shown little evidence that animacy features of the possessum drive the choice of expression.

pair-wise comparisons, comparisons that could be rendered within an OT analysis using harmonic alignment and local conjunction, following Aissen’s general approach. Here, I will question whether in fact pair-wise comparisons are really required in this case. I will then present data from Nez Perce (taken from Rude 1986b and presented in O’Connor & Deal 2003) that do seem to require pair-wise comparisons. Tentative implications for noun phrase typology follow in the conclusion.

2. Descriptive preliminaries

The Northern Pomo case-marking system includes a number of complexities (see O’Connor 1992 for details), but for current purposes it is necessary to mention only the following: there are five basic declension classes of nominals, and three case categories. which for convenience will here be called “Nominative,” “Accusative” and “Genitive.”

Table 0. Case declension classes, Northern Pomo

	1. Pronoun	2. Proper Noun	3. Kinship Noun	4. Common N Animate	5. Common N Inanimate
Nominative	-∅ and suppletive	-∅	-∅	=ya?	=ya? (agentive only)
Accusative	-al and suppletive	- <u>thuh</u>	-al	-∅ and =yajul	-∅
Genitive	-a? and suppletive	-wi?	-a?	-∅ and =yajū?	-∅

In Northern Pomo, prototypical alienable possession (i.e. possession by humans of alienable objects) is expressed by genitive case appearing on the possessor. The possessum head appears to the right and the entire phrase may be case-marked in accord with its role in the clause.²

Table 1. Canonical expression of prototypical possession, Northern Pomo

Possessor Nominal Class	English Gloss	Northern Pomo	
Local Pronoun	'my basket'	ke <i>1s.Gen</i>	pik'a <i>basket</i>
3rd prs. Pronoun	'her basket'	ma:d -a? <i>3sf. -Gen</i>	pik'a <i>basket</i>
Proper Noun	'Mary's basket'	me:di =wi? <i>Mary =Gen</i>	pik'a <i>basket</i>
Common Noun	'the woman's basket'	ma: <u>th</u> a-nam=yaju? <i>woman-Det=Gen</i>	pik'a <i>basket</i>

Notice that although the realization of genitive case morphology varies across nominal class (including suppletive, suffixal, and clitic case-marking), morphosyntactic expression of human possessors and inanimate possessa is uniform across those classes: the genitive case, whatever its specific form, marks the possessor, and the possessum is not inflected. The morphosyntax

² Morphosyntactic expression of human body part possession in Northern Pomo may follow the pattern in Table 1 or may call for external possession (sometimes called ‘possessor raising’). The semantic and pragmatic factors determining this choice are discussed at length in O’Connor 1996 and will not bear on the current analysis.

associated with prototypical alienable possession is the unmarked or canonical form of possession in Northern Pomo.

Restrictions on inanimate possessors When we look at the entire range of possible possessor-possessum combinations, however, attempting to find all combinations of animacy and expression type, we find a number of combinations that cannot be expressed using this canonical form of possession. In English, inanimate nouns may display canonical possessor marking in many circumstances: part/whole (*the car's windshield*), intrinsic property (*the shirt's color*), etc. Inanimates may grammatically 'possess' animates: *the city's mayor*. Northern Pomo does not allow inanimate possessors, even of other inanimates. That is, genitive case may not appear on inanimate nouns in the target semantic relations, even when the 'possessor' is specific and definite as indicated by the specifier =nam (i.e. it is not in a generic kind modification relation, e.g.: *a pine tree root*). To convey the meaning provided in the English translation in (1), speakers use a non-case-marked form of the possessor.

- (1) jom xale =nam yem English translation: 'the grey pine tree's root'
grey.pine tree =Spec. root

Is this restriction morphological or semantic in nature? Careful readers will have noted that the fifth declension class, inanimate nouns, displays no forms for Accusative or Genitive case. This suggests that the constraint is simply an epiphenomenon: gaps in the paradigm. However, speakers have more options than Table 0 suggests. They may cliticize a pronoun to a definite and specific expression of any nominal declension class (2-5 in Table 0). In this way even inanimates may be case-marked. Examples in (2) illustrate this strategy: the inanimate demonstrative pronoun mil heads phrases that are objects of postpositions:

- (2a) lamesa =nam =mil diyi (2b) pik'a =nam =mil dake
table =Spec =Dem.Gen next.to basket =Spec =Dem.Gen about
 'next to the table' '[talk] about the basket'

However, this strategy is not available for would-be inanimate possessors: NPs denoting specific inanimate referents may not display the pronominal genitive case to mark possessor status (2c), but must instead either appear unmarked, as in (1), or, in some semantic relations, may appear unmarked with a post-position, as in (2d).

- (2c) * pik'a =nam =mil ha (2d) balo? xay ke ja?-xale?
basket =Spec =Dem.Gen mouth PotterValley from person-chief
 'the basket's mouth/rim' 'Potter Valley's chief'

Animate possessors: restrictions by NP form There are numerous restrictions on animate possessors as well. These, however, appear to primarily concern the *NP form* or *expression type* of the nominal. A simple scale of NP forms will be assumed here, in which pronouns outrank proper nouns, and proper nouns outrank common nouns. This skeletal scale can be justified based on work by Prince (1981, 1992), Gundel et al. (1993) and Ariel (1990), among others, who have studied the discourse-pragmatic basis for speaker choice of NP form. The data described in this section will be shown to support the following rough generalization: in order to receive canonical possessor case-marking in Northern Pomo, it appears necessary (if not sufficient) that

the possessor must not be outranked by the possessum on an implicational hierarchy of NP forms.

(3) Pronoun > Proper / Kinship N > Common N (animate)

The hierarchy in (3) adds kinship nouns to the class of proper nouns, based on their behavior in the data presented below, but also for independent semantic and discourse-pragmatic reasons.³

Silverstein's 1976 paper is often interpreted to mean that NP form class plays a role in markedness hierarchies, but O'Connor (1999a) suggests that it is useful to separate the different dimensions he described. Some of the features discussed by Silverstein, notably animacy and humanness, are features of *entities*, whereas other features, notably proper noun vs. common noun, and pronominal vs. nominal, are more properly described as features of *expression types*. Silverstein himself drew back from positing that the opposition of pronominal/nominal was part of the "true nature of split systems," suggesting instead that any apparent effects might be epiphenomenal; for example in some languages they could be due to a restriction on pronominals, which in those particular languages only index humans (1976: 160).

Common noun possessors Common nouns with animate referents cannot be expressed as genitive-marked possessors of kinship terms (*that woman's mother*). They must appear without case-marking, as in (4b).

- | | | | |
|------|---|------|---|
| (4a) | * maath <u>a</u> =nam =yaju? bate
woman =Spec =Gen. mother
'the woman's mother' | (4b) | maath <u>a</u> =nam bate
woman =Spec. mother
'the woman's mother' |
|------|---|------|---|

Can common nouns possess proper nouns? In English it is possible to use a possessive determiner with a proper name, given the right contextual support. If a name does not secure unique identifiability, a possessor may provide it: *Mrs. Chase's Rebecca isn't in school today, but that other woman's Rebecca is here*. In Northern Pomo, such a construction is not possible with a common noun possessor, whether or not it bears the genitive case marker.

- | | |
|-----|---|
| (5) | * maath <u>a</u> =nam =yaju? /Ø keli
woman =Spec. =Gen. /Ø Kelly
'that woman's Kelly' |
|-----|---|

Proper and kinship noun possessors Proper noun and kinship term possessors of kinship term possessa (*Kelly's daughter, your daughter's aunt*) reflect the same prohibition as common noun possessors: if they are to appear with the kinship stem possessum, they cannot bear genitive case, but must appear without case-marking, as in (6b) and (7b).

- | | | | |
|------|--|------|--|
| (6a) | * keli =wi? bapane
Kelly = Gen. daughter
'Kelly's daughter' | (6b) | keli bapane
Kelly daughter
'Kelly's daughter' |
| (7a) | * mipane-? bashee
your.daughter-Gen mat.aunt
'your daughter's maternal aunt' | (7b) | mipane bashee
yr.daughter mat.aunt
'your daughter's maternal aunt' |

³ Pomo speakers traditionally observed a taboo against using proper names in reference or address. Kinship terms fulfilled the functions normally assigned to proper names (S. McLendon, p.c.).

Proper noun possessa are rejected with both proper noun and kinship possessors (*Mary's Kelly, your daughter's Kelly*), with or without genitive case marking:

- (8a) * meedi =wi? /Ø keli
 Mary =Gen /Ø Kelly
 'Mary's Kelly'
- (8b) * mipane -? /Ø keli
 yr.daughter -Gen /Ø Kelly
 'your daughter's Kelly'

Pronominal possessors Finally, pronominal expressions can occur as genitive-marked possessors of all NP form categories (except pronouns, which do not occur as possessa). (Pronominally possessed proper noun possessa, *his Kelly*, are somewhat marginal, but apparently are acceptable in Northern Pomo, unlike (5) and (8).)

Table 2. Pronominal possessors in Northern Pomo

Possessor/Possessum Nominal Classes	English Gloss	Northern Pomo
Pronoun/Proper Noun	(?) 'his Kelly'	moow -a? 3sm. -Gen keli Kelly
Pronoun/Kinship Term	'her daughter'	ma:d -a? 3sf. -Gen bapane daughter
Pron/Common N (human)	'their doctor'	pow -a? 3pl. -Gen matu doctor
Pron/Common N (inan.)	'her basket'	ma:da-? 3sf. -Gen pik'a basket

Summary First, inanimate possessors are disallowed; i.e. the canonical expression of possession, genitive case on a possessive modifier, does not occur with inanimate entities, no matter what their NP form. Restrictions on animate referents, however, suggest the necessity to posit an implicational hierarchy containing features of NP form, as in (3). If a possessum can co-occur with a common-noun possessor displaying genitive case, it can co-occur with a kinship term or proper noun possessor displaying genitive case. If a possessum can co-occur with a kinship term or proper noun possessor displaying genitive case, it can co-occur with a pronominal possessor displaying genitive case. In other words, the possessum must not outrank the possessor on the NP form hierarchy in (3). A stronger claim would be that the possessor must outrank the possessum, but this is too strong: animate common nouns may be canonically marked possessors of other animate common nouns (*the woman's teacher*).

It is not completely surprising that NP form should be relevant here. Even a cursory look at possessives crosslinguistically reveals that pronominal vs. nominal features are involved in differential possessor expression in a number of languages. In Irish, pronominal possessors trigger agreement and precede the possessum, whereas nominal possessors follow and do not trigger agreement. Pronominal possessors are favored in the 'mono-lexemic possessor construction,' found in numerous Slavic, Germanic and Romance languages (Skarabela et al., 2004). Ultan (1978: 36), as part of Greenberg's language universals survey, also finds asymmetries between nominal possessors and pronominal possessors.

Comparable crosslinguistic patterns are not as apparent for the category of kinship terms and proper nouns vs. common nouns. However, there is evidence beyond Northern Pomo for this

pattern: Jespersen notes that there is a strong preference for the pre-nominal genitive when "the genitival adjunct is a proper name: *John's stick*, or a pronoun: *his stick* " (1954: 312).

But what is the basis for these NP form preferences (which in English are not categorical, but statistical)? The properties that drive choice of NP form or expression type are generally pragmatic, and concern the *information status* of the entities referred to: the speaker's and (speaker's assessment of) the hearer's consciousness of entities, relations and attributes in the discourse. O'Connor (1999b) proposed that the three relevant expression types, pronouns, proper nouns, and common nouns, can be viewed as differing in their canonical information status when used as referring expressions. As Prince, Gundel and Ariel, among others, have noted in various formulations, pronouns generally have the value [+Discourse-Old]; this is sometimes referred to as their "presuppositional" property: their use requires either a previous mention or support for a (situationally evoked) deictic interpretation (Prince 1992). As they are [+Discourse-Old], they must be [+Hearer-Old]. In contrast, proper nouns are unmarked for Discourse-Old status, but they bear a positive mark for the status [+Hearer-Old]. A speaker uses a proper noun for a new mention when she believes the hearer will be able to uniquely identify the referent. Finally, common nouns are unmarked both for Discourse-Old status and for Hearer-Old status.

If it could be shown that this NP form hierarchy played a role in DPE, there might be implications for the study of parallels between the clause and the noun phrase: parallels might be found in what is now usually called "preferred argument structure." Dubois (1987) provided an early demonstration of this in his study of Sacapultec oral narratives, where he documented the strong statistical tendency for transitive subjects to be Discourse-Old and for transitive objects to be much less likely to be Discourse-Old. Importantly for the current topic, he found that 93% of possessors were discourse-old, on a par with the rates for transitive subjects. His analysis of the preferred argument structure of the clause might legitimately be extended to the NP, particularly to the possessor, the 'subject' of the NP. If the structural role of possessor (within a particular construction in a specific language) does indeed carry with it a preferred information status (as has been shown for subjects and for numerous other construction subparts; see Birner 1994, Fillmore, Kay & O'Connor 1988, Lambrecht 1994), this could explain the preponderance of certain NP form types in this position, whether motivated by categorical rules or statistical tendencies.

There are other possible explanations for the special status of pronominals and proper nouns in possessive constructions, including syntactic and semantic dimensions. Longobardi (1994), in a study of Romance and Germanic DPs, argues that proper names and generics are semantically distinct, and thus their syntax differs from definite descriptions, as well as from articleless nominals like existentials and nonargument nominal phrases. Syntactic and semantic analyses are not necessarily incompatible with discourse pragmatic analyses. A confluence of factors leading to a hierarchy like the one in (3) would not be surprising.

3. Encoding pair-wise constraints in an Optimal typology

Following Aissen's OT analyses of clause-level phenomena (1999) and obviation within NPs (1997), O'Connor (1999a,b) offered an account of the Northern Pomo facts presented above. A first step consists of harmonic alignment (Prince & Smolensky 1993) of two prominence scales. One includes the structural positions GEN (the canonically marked Possessor modifier) and

HEAD (the possessum head) (cf. Aissen 1997). The second is the animacy prominence scale: Animate > Inanimate.

This alignment yields the harmony scales $\text{Animate.GEN} >_{\text{H}} \text{Inanimate.GEN}$ and $\text{Inanimate.HEAD} >_{\text{H}} \text{Animate.HEAD}$. These can be interpreted as meaning that animate possessors are a less marked, more ‘harmonic’ combination than inanimate possessors, and inanimate possessa are a less marked, more ‘harmonic’ combination than animate possessa.

These harmony scales in turn give rise to ranked constraints: $*\text{Inanimate.GEN} \gg * \text{Animate.GEN}$ and $* \text{Animate.HEAD} \gg * \text{Inanimate.HEAD}$. More colloquially, these constraints constitute predictions about the typology of possession. They predict that cross-linguistically, animate possessors will be less marked, or are less likely to be prohibited, than inanimate possessors. Further, they predict that inanimate possessa are less marked, or are less likely to be prohibited, than animate possessa.

In Northern Pomo, as described above, there is evidence of a general constraint against inanimate possessors. What does it mean to say that a language rules out inanimate possessors? It does not mean that this language cannot express the semantic relations between inanimate entities that, say, English expresses using the Saxon genitive, e.g.: inanimate part-whole relations such as *the table’s leg*. It means rather that this language does not allow speakers to employ the construction used for canonical possession (*Mary’s basket*) when expressing inanimate part-whole relationships. It is a constraint on using certain morphosyntactic resources, notated here as GEN and HEAD, to express certain semantic relations.⁴

If we concern ourselves only with the restriction on inanimate possessors, then Northern Pomo does not appear to require pair-wise comparisons. The prohibition against inanimate possessors is not dependent on any features of the possessum. However, the facts stated in examples (4) through (8), facts requiring reference to the expression type or NP form class of the possessor and the possessum, do seem to call for pair-wise comparisons.

These facts can be derived within an OT analysis that starts out with a harmonic alignment between the three main expression types or NP form classes, and the structural categories GEN and HEAD. (In the analysis below, proper nouns and kinship terms have been lumped into one category, labelled “Proper,” as discussed above.) The alignment of the two-member scale $\text{GEN} > \text{HEAD}$ with the three-member scale $\text{Pronominal} > \text{Proper/Kin} > \text{Common}$ yields two ‘harmony scales’ (9), one expressing the relative markedness of (canonically genitive case-marked) possessors in the three NP form classes, and the other expressing the relative markedness of possessa in the three NP form classes. Markedness reversals captured by the alignment correspond roughly to observed facts.

(9) Markedness of Possessor by NP Form: $\text{GEN.Pronom} >_{\text{H}} \text{GEN.Prop.Kin} >_{\text{H}} \text{GEN.Common}$

Markedness of Possessum by NP Form: $\text{HEAD.Common} >_{\text{H}} \text{HEAD.Prop.Kin} >_{\text{H}} \text{HEAD.Pronom}$.

Next, two constraint subhierarchies may be derived, each of which captures the relative markedness of different NP form classes in the GEN or HEAD structural configuration, but this time in terms of a hierarchy of (presumably universal) constraints (labelled G1, G2, ... for

⁴ In the variety of OT assumed by Aissen, and by Bresnan (2001), the inputs are semantic representations, and the candidate sets are morphosyntactic configurations.

convenience of reference below), constraints which direct the grammar to prefer unmarked structures.

(10) *Constraint hierarchies from (9)*

	G1	G2	G3
Subhierarchy 1:	*GEN.Common >>	*GEN.Prop.Kin >>	*GEN.Pronoun

	H1	H2	H3
Subhierarchy 2:	*HEAD.Pronom. >>	*HEAD.Prop.Kin >>	*HEAD.Common

These two sets of subhierarchies correspond with the observation that pronominal and proper possessa are less likely to be licensed across languages than common noun possessa (although the reasons for these tendencies may be diverse, as noted elsewhere in this paper). They also correspond with the Northern Pomo facts that pronominal possessors may always receive canonical morphosyntactic expression, whereas in many cases common nouns cannot.

But note that the facts presented in Section 2 concern pair-wise constraints. For example, a common noun possessor is not always ruled out—it is only ruled out in cases where the possessum is expressed in an NP form class that outranks it. In order to capture the seemingly pair-wise nature of the constraints, O’Connor (1999 a,b) resorted to the use of local conjunction (a formal strategy that is not without controversy in OT).

Following Aissen’s analysis (1999) and Artstein’s proposals (1998) (both following on Smolensky’s original proposal (1995)), we first conjoin constraint G1 with each constraint in subhierarchy 2 (H1, H2 and H3). Then constraint G2 is conjoined with each constraint in subhierarchy 2, and then constraint G3 in the same fashion. Then, one by one, each constraint in subhierarchy 2 is locally conjoined with the constraints in subhierarchy 1. (The local conjunctions are commutative: G1&H1 is equivalent to H1&G1.)

(11) *Local conjunction of constraints in (10)*

*GEN.Common&*HEAD.Pronom. >>	*GEN.Comm&*HEAD.Prop>>	*GEN.Comm*HEAD.Comm
G1&H1	G1&H2	G1&H3
*GEN.Prop&*HEAD.Pronom. >>	*GEN.Prop&*HEAD.Prop>>	*GEN.Prop*HEAD.Comm
G2&H1	G2&H2	G2&H3
*GEN.Pronom&*HEAD.Pronom. >>	*GEN.Pronom&*HEAD.Prop>>	*GEN.Pronom*HEAD.Comm
G3&H1	G3&H2	G3&H3

and so on:

H1&G1 >> H1& G2 >>H1& G3;
H2&G1 >> H2&G2>> H2& G3;
H3&G1 >> H3&G2>> H3& G3

After the entire set of six subhierarchies of locally conjoined constraints is derived, a partial ordering of the constraints emerges, as shown in the lattice below in Table 3. Table 3 can be interpreted as follows. The top constraint pair, G1&H1, outranks all other combinations. This

means that crosslinguistically, the combination of a common noun possessor and a pronominal head (*the man's them*) is more likely to be prohibited than any other combination.

Table 3. Partial ordering of NP form constraints on GEN/HEAD pairs

		G1&H1 *GEN.Common &*HEAD.Pronom.		
	G1& H2 *GEN.Comm& *HEAD.Kin/Prop		G2& H1 *GEN.Prop& *HEAD.Pronom.	
G1&H3 *GEN.Comm &*HEAD.Comm		G2& H2 *GEN.Kin/Prop& *HEAD.Kin/Prop		G3& H1 *GEN.Pronom &*HEAD.Pronom
	G2&H3 *GEN.Kin/Prop &*HEAD.Comm		G3&H2 *GEN.Pronom &*HEAD.Kin/Prop	
		G3&H3 *GEN.Pronom &*HEAD.Comm		

The lowest constraint pair, G3&H3, is outranked by all other combinations. This means that the combination of a pronominal possessor and a common noun head (*her dog*) is least likely to be prohibited cross-linguistically (or in terms of the OT constraints, it is the paired constraint most likely to be violated).

To simplify this analysis, I will set aside the constraints involving pronominal heads. For whatever reason, languages that allow pronominal possessa are at least very rare.⁵ We can set aside the three cells that include a constraint on pronominal heads and still obtain a partial ordering as below.

Table 4. NP form constraints on GEN/HEAD pairs, excluding Pronoun Heads

Violation of conjoined constraints[A&E] is most highly marked		G1&H2 *GEN.Comm& *HEAD. Prop/Kin	
These pairs, [A&F] and [B&E], are unranked with respect to each other	G1&H3 *GEN.Comm &*HEAD.Comm		G2&H2 *GEN.Prop/Kin & *HEAD. Prop/Kin
These pairs, [B&F] and [C&E], are unranked with respect to each other	G2&H3 *GEN. Prop/Kin &*HEAD.Comm		G3&H2 *GEN.Pronom &*HEAD.Prop/Kin
Violation of conj. constraints[C&F] is least marked		G3&H3 *GEN.Pronom &*HEAD.Comm	

⁵ It may be that the rarity of possessed pronominal heads has to do both with the syntactic and semantico-pragmatic nature of pronouns, in combination with the syntax, semantics and pragmatics of possession. In Northern Pomo, it is possible to adjoin an uninflected kinship term or proper noun to a 3rd pl. pronoun in a relation construable as extended kinship, but the genitive case is not allowed: *keli=nam=pow Kelly=Spec.=3pl.Nom*. The translation in colloquial English, “Kelly and them”, means only ‘Kelly and her family,’ as in “Kelly ‘n them are coming over again tonight.” The extension of the referring expression appears to include the possessor: *mite=pow yr.mother=3pl.Nom.*: “your mother’s people [lived there]” (includes the mother).

In this lattice,⁶ G3&H3 the constraint pair that would jointly prohibit *her dog*, is still lowest, that is, most likely to be violated across languages. The pairing most likely to be successfully prohibited across languages is G1&H2: common noun possessors and proper or kinship possessa: *the woman's Kelly* or *the man's mother*. While the latter sounds perfectly felicitous in English, in Northern Pomo neither can be expressed in the construction used for canonical possession.

The above analysis, when considered within the theoretical commitments of OT typology, constitutes several claims. Among these are the prediction that (a) we will find no language in which common nouns are allowed to possess common nouns (*the woman's dog*), but proper or kinship nouns *cannot* possess common nouns (**Kelly's dog*) and that (b) we will find no language in which common nouns can possess proper or kinship nouns (*the woman's daughter*), but in which proper or kinship nouns *cannot* possess proper or kinship nouns (**his aunt's daughter*, **Kelly's daughter*).

Because of the apparent pair-wise constraints found in Northern Pomo, this seems to be a desirable result. O'Connor (1999a,b) shows that the ranking of similar conjoined constraints derives the observed choices of candidates. However, I will now argue that this analysis, while compatible with the facts, may not be necessary, and thus may not be desirable. Within the OT framework, to maintain a hope of constraining the space of possible languages, proposed constraints must be considered universal. Therefore, when proposing something as typologically striking as a large set of pair-wise constraints on a particular structural configuration—pair-wise constraints that have not been widely observed in that configuration cross-linguistically—it is advisable to consider whether there might not be a more conservative analysis that could still capture the facts.

4. A skeptical revisiting

First consider the fact that the canonical expression of possession is ruled out for inanimate possessors. As depicted above, this fact folded nicely into the apparent hierarchy effect. Inanimate entities could not possess any entity higher on the animacy scale, nor could they possess any entity on their 'own level' of animacy. But this fact does not truly require a pair-wise comparison. It may simply be stated as a constraint *Inanimate.GEN, as derived above. Given the harmonic alignment of GEN>HEAD with Animate>Inanimate, we retain the plausible and intuitively appealing prediction that no language will allow inanimate possessors that does not also allow animate possessors.

The core of the proposed hierarchy effects between possessors and possessa lies in those examples in which a kinship stem is the possessed head of the phrase. Examples like *Kelly's mother* and *the woman's daughter* cannot be expressed in the canonical configuration of genitive case marking on the possessor. Yet speakers can express these meanings. How do they do so? As mentioned above, all proper, kinship, and common noun possessors of kinship terms do not receive any case marking: they appear uninflected, as shown in Table 5.⁷

⁶ Generally, constraints on the same level of the lattice are unordered, and constraints that are higher in the lattice outrank those lower down. However, these are not completely regular; e.g. the pair G1&H3 is not ordered with respect to the pair G3&H2, but G2&H2 does outrank G2&H3.

⁷ More precisely, the morphologically simplest free form is employed. For proper nouns and kinship terms this is the Nominative, and for common nouns it is (the simplest variant of) the Accusative. Northern Pomo displays an ergative split in its nominal class case marking (see Table 0 above and O'Connor 1992 for details).

Table 5. Caseless possessors of kinship stems

Proper noun possessor <i>Mary's maternal grandmother</i>	medi Mary	baka? maternal grandmother
Kinship noun possessor <i>His daughter's maternal grandmother</i>	bapane his daughter	baka? maternal grandmother
Common noun possessor <i>The woman's maternal grandmother</i>	maath <u>a</u> =nam woman=Spec.	baka? maternal grandmother

Observant readers by this time will be suspicious: what is the internal structure of these kinship terms? As an expanded version of *his daughter's maternal grandmother* will show, each kinship stem carries a prefix indicating person features of the possessor, in (12), third person:

- (12) ba- pane ba- ka?
 3's- daughter 3's- m.grandmother 'His daughter's maternal grandmother'

Kinship stems must either carry a possessor prefix or the vocative suffix. In (13), the range of possessive prefixes is demonstrated with the kinship root ka?, *maternal grandmother*.

- (13) ?ami- ka? 'my maternal grandmother'
 mi- ka? 'your maternal grandmother'
 ba- ka? 'his/her/their maternal grandmother'
 ma- ka? 'logophor's maternal grandmother'
 ka? -day 'Grandmother!'

How might these pronominal prefixes provide an explanation for the constraint against genitive case-marked possessors described in Sections 2 and 3? The answer requires that we first consider the special semantics of kinship terms.

Kinship terms are a central member of the class of relational nouns: each carries a lexical requirement for a possessor argument. O'Connor (1999a) proposed that these pronominal prefixes were not agreement prefixes, but were in fact incorporated pronouns, satisfying the possessor argument requirement of these kinship stems. Kinship stems with pronominal prefixes can occur without any other explicit expression of the possessor, and the kinship possessor will be understood either deictically or in terms of an accessible discourse referent.

- (14) Speaker one: "Who just left?"

Speaker two: ba-pane 'his daughter' (pointing at him, not the daughter)
 3's- daughter

In (15), the 3rd person pronominal prefix ba- may be anaphoric to an NP that is explicit but extra-clausal (either 'he' or 'they' in the first clause below) or it may be interpreted as indexing some previously mentioned or otherwise accessible third person entity.

- (15) moow pow-al ba?ole nathe **ba**-ka? ?o? duhu-y
 3sm.Nom 3pl.-Acc call but 3's-mat.grmo. already leave-Perf.
 'He_j called them_k but his_j /their_k /3's_x maternal grandmother had already left.'

These facts are compatible with an account in which the prefixes are agreement markers, or an account such as the one just mentioned, in which the prefixes are acting as incorporated pronouns. Following the analysis of pronominal incorporation at the level of the clause in Chichewa (Bresnan & Mchombo 1987), it is possible to both show that these prefixes are incorporated pronouns, and at the same time derive an explanation for the caseless possessors in Table 5.

Bresnan and Mchombo (1987) use a variety of syntactic, morphological, phonological and semantic tests to show that an optional “Object Marker” in Chichewa is actually an incorporated pronoun: when it appears on the verb, a full NP that appears to be the Direct Object can be shown to actually be a Topic: the Object Marker is an incorporated pronoun that is fulfilling the argument requirements of the verb. Functional Uniqueness, a principle within LFG that ensures that each grammatical function will be uniquely instantiated, is invoked to explain why the presence of the Object Marker allows a Topic NP but not a Direct Object NP. They extend the analysis to other languages, and make the following statement about languages with pronominal incorporation (PI):

From the principle of functional uniqueness it also follows that, in languages with PI, a verb or other head cannot govern the case of any referential nominals with which its incorporated pronouns agree. If the incorporated pronoun is a referential argument, itself governed by the verb, then by functional uniqueness an external referential NP cannot also serve as that argument. Hence such an external NP cannot be related to that argument position of the verb by government, but only by anaphora with the agreeing incorporated pronoun. However, the categories of agreement in these anaphoric relations are universally the referentially classificatory properties—person, number, and gender (or animacy), but NOT grammatical case.

(Bresnan & Mchombo 1987: p.765).

If the pronominal prefixes on Northern Pomo kinship terms are instances of incorporated pronouns, then it should not be possible for the possessive NP to contain any other instantiation of the grammatical function of possessor. Therefore, the full NP possessors of kinship terms in Northern Pomo shown in Table 5 are caseless because they are adjuncts, not arguments. They provide information about the number, gender, and specific identity of the third person possessor, but they do not fulfill the possessor argument requirement of the relational head noun, the kinship stem, and thus cannot bear the Genitive case. If we accept this analysis, an entire class of problematic examples that appeared to require pair-wise comparisons are accounted for without the need to propose universal constraints that refer to both the possessor and the possessum.⁸

⁸ This analysis also explains why a few kinship terms that do not carry the *ba-* prefix do not display the same case-marking constraints. For example, *kanema?* ‘relations, kin,’ arguably a kinship term, allows common, proper and kinship nouns displaying the canonical genitive case for possession: *maath_a=nam=yaju? kanema?* *woman=Spec.=Gen. relations* ‘The woman’s relatives.’ These contrast with (4), (6) and (7).

However, there is still one unexplained fact that appears to favor the pair-wise comparison on the NP form implicational hierarchy. Recall that *pronominal* possessors *must* display Genitive case when the possessum is expressed as a kinship stem, as shown in Table 2 and below:

- (16) pow -a? ba-ka? 'their maternal grandmother'
 3pl. -Gen. 3's-m.grandmother

This example appears to violate the very principle that explained the *non-pronominal* cases: functional uniqueness. If the pronominal prefix is fulfilling the role of the possessor argument, how can there be a second NP which by its case-marking informs us that it is also a possessor? Bresnan & Mchombo (1987) faced the same question at the clausal level in Chichewa: they were confronted with a “Subject Marker” that sometimes showed the same behavior as the Object Marker—it sometimes functioned as an incorporated pronoun, blocking a full NP subject but allowing a Topic to which it could be linked anaphorically. In other examples it paradoxically seemed to allow a full NP subject, thus potentially violating functional uniqueness. Their solution was to suggest that the variability reflected linguistic change in progress: they claimed that the well-known historical process whereby incorporated pronouns turn into agreement inflections is in progress in Chichewa.

Is it possible to explain examples like (16) in the same way? I have no independent evidence that the prefix in (16) is an agreement inflection while the prefixes in Table 5 are incorporated pronouns. However, this is a possible solution that would obviate any remaining need to consider pair-wise comparisons in generating possessive phrases in Northern Pomo. Nichols (1988) points out that if a language allows head-marking for inalienable possession at all, it will allow it with kinship terms (head-marking in this instance being agreement realized on the possessum). Presumably this typological observation means that the historical process Bresnan and Mchombo impute to the variable ‘Subject Marker’ at the clause level in Chichewa could reasonably be entertained as taking place inside the possessive NP in Northern Pomo.

There is, moreover, another class of possible explanations. A persistent problem for the LFG principle of functional uniqueness (and its analogue in other frameworks) is posed by clitic doubling at the clause level. If a pronominal clitic is functioning as an incorporated pronoun argument of the verb, what allows its double to appear in argument position as well? One interesting fact about clitic doubling concerns pronouns: if a language allows clitic doubling, it will always allow it with independent pronoun doubles. At the risk of appearing to hand-wave, I will assert that whatever general explanation underlies this fact at the clause level would be able to explain what is apparently a similar pattern at the NP level in Northern Pomo.

My point is simply that the special privileges of these pronominal possessors, in contrast to the behavior of other NPs, is part of a more general phenomenon, exemplified at the clause level in some languages by the transition of incorporated pronouns to agreement, or by observed patterns in clitic-doubling. We do not have to deal with it by proposing a constraint that invokes pair-wise comparisons. It is enough to say that the licensing of genitive case on the pronominal possessor of a kinship NP in Northern Pomo is an instance of a general problem: apparent clause-level and NP-level violations of functional uniqueness, many of which seem to involve pronouns, and which may receive a variety of explanations.

Finally, what of the unacceptability of proper noun possessa, e.g. ‘Mary’s Kelly’ and ‘her aunt’s Kelly’? Even in English, these are marginal to some speakers except in highly contrastive contexts. Further study will be required to understand the conditions under which

these are allowed. Their unacceptability may well be explainable solely in terms of the NP form of the possessum, and the marginally better pronominal possessors do not present strong evidence of a pair-wise constraint. In the absence of the necessity to explain the far more pervasive kinship facts in terms of pair-wise comparisons, these facts alone do not warrant positing such a striking set of universal constraints.

In summary, it appears that a convergence of unrelated factors creates an appearance of pair-wise constraints within the possessive NP in Northern Pomo. I have shown that it is possible to pull apart these factors and undermine my previous claims about the necessity for such an analysis. But does this mean that there are no legitimate cases of the need for pair-wise comparisons in any other language? In the next section I will review data that, although sparse, suggest that such cases may exist.

5. External Possession in Nez Perce

One important variety of DPE has been called variously ‘possessor raising’, ‘genitive promotion’ and ‘external possession’. External possession constructions (extensively described in Payne & Barshi 1999) generally code the possessor as a core argument of the verb, leaving the possessum in its own (sometimes adjunct-like) constituent. In a sense it treats an n-place predicate as if it were an n+1-place predicate. In Nez Perce, a Sahaptian language extensively described by Rude (1986a, 1986b, 1999 inter alia) and Aoki (1970, 1979, 1994), “genitive promotion” is signalled by an affix on the verb. When a Possessor has been ‘promoted’ to direct object, a suffix appears in the verb.

- (16) **'imés-ne** tu'uynu tálam pe-énp **-ey'** -se
deer-OBJ tail-0 end-0 3ERG-take -GEN -IMP.SG

'She took the deer's tail end' (Aoki and Walker 1988: 389, 61)

When a Possessor is ‘promoted’ to subject of an intransitive verb, a verbal prefix indicates this, as in (17) below.

- (17) **há:ma-nm** sík'em 'e- kú: -ye
man-GEN horse-0 3GEN -go-PERF

'The man's horse went.' (Rude 1986b: 110, ex. (5))

Rude (1986b) carried out a study of “genitive promotion” to subject, based on texts in Nez Perce, attempting to quantify the degree to which animacy features determined the use of regular possession versus genitive promotion. What he found appears to indicate that a pair-wise comparison is required. Genitive promotion is most strongly favored when the possessor is human and the possessum is inanimate, and is least acceptable when the possessor is inanimate and the possessum is animate. Table 6 summarizes his results. The sample is quite small, but the results are suggestive: it appears that speakers take into account the possessor’s animacy and the animacy of the possessum when they choose the manner in which they will express possession.

Table 6. *Nez Perce genitive promotion to subject: pair-wise comparison (data aggregated from Rude 1986b, pp. 128-130)*

Animacy of GEN (Possessor) and HEAD (Possessum)	Total	Promoted	Unpromoted	%Promoted
Human Gen, Non-hum Head <i>"the child's bow"</i>	38	35	3	92%
Human Gen, Human Head <i>"Coyote's friend"</i>	18	12	6	67%
Non-human Gen, Non-human Head <i>"harpoon of horn"</i> (horn-GEN harpoon)	8	3	5	38%

Finally, genitive promotion of inanimate possessors over animate heads is strongly dispreferred. Examples such as *the leader of this land* or *this land's leader* appear instead in the canonical possession construction (this land-GEN leader), (Rude 1986b, ex. (71), p. 126).

Does this mean that we have revived the necessity for pair-wise comparisons at the NP level? Not necessarily: consider one important difference between the Northern Pomo and the Nez Perce phenomena. In Northern Pomo, all facts to be accounted for were internal to the NP. In Nez Perce, the choice concerns the accessibility of a core argument slot to a non-core event participant: both the clausal arguments and the potential NP-internal participants are involved in a complex set of contingencies. There are several potential analyses of the Nez Perce genitive promotion facts that might allow us to avoid the necessity for pair-wise comparisons, but space does not permit expanding upon them here. It is also possible that the Nez Perce facts may most appropriately be analyzed in terms of verb-level factors not yet studied. In any case, following the logic of the Northern Pomo reanalysis, it would be wise to proceed cautiously.

6. Conclusion⁹

Several tentative conclusions can be drawn. Though none are fully explicated here, I think it is likely that each could be productively pursued in the context of broader study of differential possessor expression. First, despite very strong evidence for the necessity of pair-wise constraints on person and animacy at the clause level, as Aissen has shown, there is no strong support in the Northern Pomo facts presented here for the necessity to posit a similar pair-wise constraint on the expression of possession in the NP. The apparent necessity for such constraints

⁹ The research reported here was partially funded by an NSF grant to the author (BCS 0080377 Linguistics), titled "Optimal Typology of Determiner Phrases: Markedness Inside the Noun Phrase." Support of NSF is gratefully acknowledged; no official endorsement is implied. As always, deepest thanks to Elenor Gonzalez and the late Edna Guerrero, indefatigable Northern Pomo consultants. Many thanks for patience, comments and questions starting in 1999: Farrell Ackerman, Judith Aissen, Arto Anttila, Peter Austin, Joan Bresnan, Aaron Broadwell, Amy Dahlstrom, Gregory Garretson, Marj Hogan, Joan Maling, Bonnie Schwartz, Barbora Skarabela, and others at the 1999 and 2003 LFG conference. Finally, my co-author at LFG03, Amy Rose Deal, deserves special thanks for her intrepid work on the grammar of Nez Perce.

in Northern Pomo NPs was shown to be a product of several unrelated factors working in the same direction. While it is clear that some constraint on inanimate possessors is probably necessary in Northern Pomo, these data do not force an analysis in which NP form classes must explicitly be mentioned in pair-wise comparisons of possessor and possessum NPs. (There is evidence, however, that NP form hierarchy effects may play a role in differential possession expression in other languages, see O'Connor et al. 2004, and Skarabela et al. 2004).

On the other hand, a small study of Nez Perce 'genitive promotion' (Rude 1986b), provides evidence that at least some varieties of DPE may depend on animacy constraints applied to pairs of arguments in the possessive NP. Yet genitive promotion is not limited to the possessive NP. It crucially involves clausal relations as well: the promotion of a possessor to subject or direct object (however this 'promotion' is construed). It may be possible to employ constraints that are independently necessary at the clause level here as well, avoiding the need to propose new universal constraints within the NP.

Finally, these data illustrate an interesting and previously unobserved parallel between clausal and nominal structures. Pronominal incorporation phenomena previously observed at the clause level for subjects in Chichewa (Bresnan & Mchombo 1986) appear quite parallel to pronominal incorporation of possessors inside NPs headed by kinship stems in Northern Pomo. Study of this system and others like it (e.g. those identified in Nichols 1988) may further illuminate the similarities and differences between the clause and the NP.

References

- Abney, S.P. 1987. *The English Noun Phrase in its Sentential Aspect*. Unpublished Ph.D. Thesis. MIT.
- Aissen, Judith. 2003. 'Differential object marking: iconicity versus economy', *Natural Language and Linguistic Theory* **21**: 435-483.
- Aissen, Judith. 1997. 'On the Syntax of Obviation', *Language* **73**: 705-750.
- Aissen, Judith. 1999. 'Markedness and subject choice in optimality theory', *Natural Language and Linguistic Theory* **17**: 673-711.
- Artstein, R. 1998. Hierarchies. Unpublished paper. New Brunswick, Rutgers University. Postscript: www.eden.rutgers.edu/~artstein/hierarchies.ps.
- Aoki, Haruo. 1970. *Nez Perce Grammar*, Berkeley: University of California Press.
- Aoki, Haruo. 1994. *Nez Perce Dictionary*, Berkeley: University of California Press.
- Aoki, Haruo, and Deward Walker. 1989. *Nez Perce Oral Narratives*, Berkeley: University of California Press.
- Ariel, Mira. 1990. *Accessing Noun Phrase Antecedents*. London: Routledge.
- Barker, C. 1995. *Possessive Descriptions*. Dissertations in Linguistics. CSLI Publications. Center for the Study of Language and Information, Stanford: CA.
- Bernstein, J. (2001). The DP hypothesis: Identifying clausal properties in the nominal domain. In Baltin, M., and C. Collins (eds.), *The Handbook of Contemporary Syntactic Theory*. Oxford: Blackwell.
- Birner, B.J. 1994. Information Status and Word Order: An Analysis of English Inversion. *Language*, Vol. 70. Pp. 233-259.

- Bresnan, J. 1999. Explaining Morphosyntactic Competition. In Baltin, M., and C. Collins (eds.), *The Handbook of Contemporary Syntactic Theory*. Oxford: Blackwell.
- Bresnan, Joan, and S. A. Mchombo. 1987. Topic, pronoun, and agreement in Chichewa, *Language* **63**: 741-782.
- Chomsky, N. 1970. Remarks on Nominalization. In Jacobs and Rosenbaum (eds.), *Readings in English Transformational Grammar*. Blaisdell, Waltham, MA.
- DeLancey, Scott. 1981. An Interpretation of Split Ergativity. *Language*, Vol. 57. Pp.626-657.
- Du Bois, J.W. 1987. The Discourse basis of ergativity. *Language*, Vol. 63.4. Pp. 805-855.
- Fillmore, C.J, P. Kay and M.C. O'Connor. 1988. Regularity and Idiomaticity in Grammatical Constructions. *Language*, Vol. 64.3. Pp.501-38.
- Gundel, Janette, Nancy Hedberg and Ron Zacharski. 1993. Cognitive status and the form of referring expressions in discourse. *Language* **69.2**: 274-307.
- Hawkins, Roger. 1981. Towards an account of the possessive constructions, NP's N and the N of NP. *Journal of Linguistics* 17: 179-196.
- Jackendoff, R. 1977. *X-bar Syntax: A Study of Phrase Structure*. Cambridge, MA: MIT Press.
- Jespersen, O. 1954. *A Modern English Grammar on Historical Principles*. London, G. Allen & Unwin, ltd.
- Lambrecht, K. 1994. *Information Structure and Sentence Form*. Cambridge, Cambridge University Press.
- Longobardi, G. 1994. Reference and Proper Names: A Theory of N-Movement in Syntax and Logical Form. *Linguistic Inquiry*, Vol. 25.4. Pp. 609-665.
- Mirto, I.M. 1998. *The Syntax of the Meronymic Construction*. Progetti Linguistici 9. R. Ambrosini (Ed.). Edizioni ETS.
- Nichols, J. 1986. Head-marking and Dependent-marking Grammar. *Language*, Vol. 62. Pp. 56-119.
- Nichols, Johanna, 1988. On alienable and inalienable possession. In: Shipley, William [ed.], In honor of Mary Haas, pp. 557 – 609. Berlin.
- O'Connor, M. C. 1999a. Harmonic alignment of the animacy hierarchy and the structure of possessive DPs in Northern Pomo, Workshop on Native American Languages, LFG 99. University of Manchester, Manchester UK. July, 1999.
- O'Connor, M.C. 1999b. An Optimality Theory account of possessive DPs in Northern Pomo. Joint meeting of the NSF-funded Optimal Typology projects at Stanford University and U.C. Santa Cruz. Stevenson College, UCSC. October, 1999.
- O'Connor, M.C. 1996. The situated interpretation of possessor raising. In S.Thompson and M. Shibatani (Eds), *Grammatical Constructions: Their Form and Meaning*. Oxford: Oxford University Press. pp. 125-156.
- O'Connor, M.C. 1992. *Topics in Northern Pomo Grammar*. Garland Series of Outstanding Dissertations in Linguistics, J. Hankamer (Ed.). New York: Garland Publishing Inc.
- O'Connor, M.C., A. Anttila, and V. Fong. 2004. Differential possessor expression in English: Re-evaluating animacy and topicality effects. Annual Meeting of Linguistic Society of America, January 2004, Boston, MA.

- O'Connor, Cathy, and Deal, Amy Rose. 2003. Differential Possessor Expression: Is the possessum ever a factor? Workshop on Native American Languages, LFG 03. Saratoga Springs, NY. July, 2003.
- Payne, Doris, and Immanuel Barshi. 1999. *External possession*, Amsterdam: John Benjamins.
- Prince, A. and P. Smolensky. 1993. *Optimality Theory. Constraint Interaction in Generative Grammar*. RuCCs Technical Report No. 2, Rutgers University Center for Cognitive Science, Piscataway, N.J.
- Prince, Ellen. 1981. Toward a taxonomy of given-new information. In P. Cole (Ed.) *Radical Pragmatics*. New York: Academic Press. 223-256.
- Prince, Ellen. 1992. The ZPG letter: subjects, definiteness, and information status. In S. Thompson and W. Mann (Eds.) *Discourse Description: Diverse Analyses of a Fund Raising Text*. Amsterdam: John Benjamins B.V. 295-325.
- Rosenbach, Anette. 2002. *Genitive variation in English*, Berlin: Mouton de Gruyter.
- Rude, Noel. 1986a. 'Topicality, transitivity, and the direct object in Nez Perce,' *International Journal of American Linguistics* **52**: 124-153.
- Rude, Noel. 1986b. 'Discourse pragmatic context for genitive promotion in Nez Perce,' *Studies in Language* **10**: 109-136.
- Rude, Noel. 1999. 'External possession in Sahaptian', in D. Payne and I. Barshi (eds.), *External Possession*, Amsterdam: John Benjamins, pp. 403-427.
- Silverstein, M. 1976. 'Hierarchy of features and ergativity', in R.M.W. Dixon.(Ed.), *Grammatical Categories in Australian Languages*. Canberra: Australian Institute of Aboriginal Studies. Pp. 112-171.
- Skarabela, Barbora, Cathy O'Connor, and Joan Maling. 2004. The monolexemic possessor construction: Pragmatic constraints in the noun phrase. Annual Meeting of Linguistic Society of America, January 2004, Boston, MA.
- Ultan, R. 1978. Substantival Possession. In Greenberg, J.H. (Ed.) *Universals of Human Language*. Vol. 4: *Syntax*. Pp.11-49.