Title: Head-Level and Chain-Level Constraints on Spellout

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1 Introduction

Woolford (2003) discusses languages where pronominal clitics and verb agreement are dynamically in complementary distribution: If cross-referencing of an argument by a clitic is not possible, this is taken over by otherwise impossible agreement. She proposes an optimality-theoretic account of these facts which is based on a general constraint requiring cross-referencing of arguments and different markedness constraints for clitics and agreement. Crucially, this account predicts that an argument should never be cross-referenced by both a clitic and by agreement at the same time.

In this paper, I argue that this conclusion is too strong: Languages *can* have cross-referencing by clitics and agreement at the same time (e.g., Piattino, Gerlach, 2001; and Bavarian, Weiss, 1998). The article focuses on Algonquian, especially Menominee (Bloomfield, 1962) which shows coocurrence of clitics and agreement, spelling out features of the same argument, but also evidence for constraints against such coocurrence in specific contexts. I propose to maintain the basic insight behind Woolford's approach by assuming that clitics and agreement affixes are the spell-out of underlying chains already containing (identical) phi-features for clitics and agreement. Non-coocurrence of clitics and agreement follows from spellout restrictions on the chain domain, while coocurrence reflects high-ranked faithfulness constraints in more local domains. Basically, I argue that constraints on spellout apply in different defined domains of different size.

The paper is organized as follows: In section 2, I introduce the approach of Woolford (2003) and show in section 3 that it is empirically problematic for cases where agreement and clitics coocur. Section 4 discusses relevant data from Menominee local object marking. An alternative analysis in terms of optimality-theoretic constraints is proposed in section 5, which is extended to an account of Menominee 3rd-person marking in section 6. In the following two sections, I show that the introduced constraint types also account for the Selayarese data originally analyzed by Woolford (section 7) and most of the factorial typology she proposes for cross-referencing (section 8). Section 9 gives a short summary of the paper.

2 Clitic-Agreement Complementarity in Woolford (2003)

Woolford (2003) provides a general theory of the interaction between clitics and agreement couched in Optimality Theory (OT, Prince and Smolensky, 1993; McCarthy and Prince, 1994,

1995), making substantial crosslinguistic predictions, but also allowing to reduce complex ergative patterns in single languages to standard syntactic structures. In Woolford's approach, clitics and agreement are not given as such by the input to syntactic computation, but are analyzed as means to satisfy a violable constraint requiring that verbal arguments are cross-referenced in a clause:

(1) **Xref:** Cross-reference all arguments

Cross-referencing means here that the phi-features of the argument are expressed by an agreement affix, a pronominal clitic (or both). Thus, only candidate (2d) in the following tableau, which has neither, actually violates XRef:

(2) **Schematic violations for XRef (Input: Subj)**

	XRef
☞ a. AgrS	
☞ b. CL	
☞ c. AgrS CL	
d.	*!

Additionally, there are two different markedness constraints which penalize any occurrence of clitics and agreement markers:

(3) a. ***clitic:** Don't have clitics
b. ***agree:** Don't have agreement

These two constraints help to exclude (2c) (see below for discussion). Under the assumption that they are strictly ranked (i.e., do not form a tie) and at least one of them is ranked below XRef, they lead to the choice of either (2a) (if *clitic is ranked above *agree and hence agreement is preferred) or (2b) (if *agree is ranked above *clitic). If both markedness constraints are ranked above XRef, the latter gets irrelevant and no argument is cross-referenced by clitics or agreement (2d).

The system so far is highly symmetrical: All arguments are targeted by the constraints in the same manner; agreement and clitics are equally marked with preferences determined by language-specific ranking of the corresponding constraints. A crucial asymmetry is introduced by the constraint AgrS which requires that clauses mark subject agreement:

(4) **AgrS:** Realize AgrS

Note that AgrS holds also in clauses without a syntactic source for agreement (such as feature checking), and can hence also be satisfied by default agreement. As Woolford shows in detail, different ranking of the introduced constraints allows to derive exactly five cross-referencing patterns in a single language:

(5) **Predicted patterns**

(i) all eligible arguments cross-referenced with agreement
(ii) all eligible arguments cross-referenced with clitics
(iii) subject agreement plus object clitic(s)
(iv) just subject agreement
(v) no cross-referencing at all

All of these patterns are attested crosslinguistically, while several conceivable systems which are excluded by this constraint set seem to be non-existent. For example, there is no known language whose only cross-reference device are subject clitics.

Besides this general result, Woolford uses these constraints together with other constraints to derive more intricate patterns in single languages. For example, in Selayarese[1], intransitive subjects are cross-referenced by a clitic (6a), while in transitive clauses the clitic agrees with the object, and the subject triggers agreement (6b,c) (cited following Woolford, 2003:14). Note that the person markers following the verb in these examples are clitics suffixed to the first element of the clause, while the person markers preceding the verb in (6) are agreement prefixes attached to the verb.

(6) **Dynamic complementarity in Selayarese**

a.	*ak-kelong-**ko***	'**you** sang' (Finer, 1991:(3d))
	INT-sing-2	
b.	*la-keo'-**ko** i Baso'*	'Baso called **you**' (Finer, 1995:(14d))
	3-call-2 DET Baso	
c.	***mu**-pallu-i juku?-iñjo ri koroŋ*	'**you** cooked the fish in the pan'
	2-cook-3 fish-DEF in pan	(Finer, 1999:(11))

This distribution follows from the constraints above and an additional alignment constraint CL[$_X$ which in effect requires that only one clitic should occur in a verb form.[2] In intransitive clauses, this constraint is irrelevant for clitic occurrence. Assuming that *agree is ranked higher than *clitic and AgrS, this means that the subject is marked by a cross-referencing clitic:

[1]Woolford also discusses a similar but much more intricate agreement pattern in Yimas which is outside the scope of this paper.

[2]Technically, alignment constraints require that edges of different constituents should be as close to each other as possible (McCarthy and Prince, 1993). Since this requirement holds for all members of a specific category, aligning clitics to a specified edge can never be completely satisfied if there is more than one clitic. This has the effect that such a constraint favors forms with only one clitic.

(7) **Input: Subj**

	XRef	CL[$_X$	*agree	*clitic	AgrS
a. AgrS			*!		
☞ b. **CL**				*	*
c.	*!				*

However, in transitive clauses, the preference for clitics cannot be completely maintained since it would lead to two clitics (for subject and object) and hence a violation of CL[$_X$. Since the latter is ranked higher than the markedness constraints and AgrS, one argument is cross-referenced by a clitic, and the other one by agreement. AgrS ensures that agreement is with the subject and not with the object:

(8) **Input: Subj** Obj

	CL[$_X$	*agree	*clitic	AgrS
a. AgrS AgrO		**!		
☞ b. **AgrS** CL		*	*	
c. CL AgrO		*	*	*!
d. CL CL	*!		**	*

While Woolford's approach combines in a desirable way crosslinguistic generalizations and the analysis of intricate cross-referencing patterns in single languages, it makes a prediction which is empirically problematic: It implies that the same argument can never be cross-referenced by a clitic and an agreement affix at the same time. Candidates of this type are *harmonically bounded* by candidates which have only agreement or only clitics. A candidate C harmonically bounds another candidate C' iff C does not induce more constraint violations than C' on any constraint, and C' induces at least one more constraint violation than C for at least one constraint (Prince and Smolensky, 1993:129). As shown by Prince and Smolensky, a candidate which is harmonically bounded by another one can never become optimal under any ranking. (9) shows this schematically for subject cross-referencing. (In the following two tableaus, ranking is assumed to be irrelevant, and shading marks non-violation in all cells):

(9) **Input:** Subj

	XRef	CL[$_X$	*agree	*clitic	AgrS
a. AgrS CL			*	*	
☞ b. AgrS			*		

Since (9a) violates all constraints that (9b) violates (namely *agree) and in addition *clitic, (9a) can never become the optimal candidate.[3] Basically, the same holds for cross-referencing

[3]This does not mean that (9b) is necessarily the optimal candidate. It could be outranked by a different candidate, say one with only one clitic.

with objects. Candidates with only agreement (10b) or only a clitic (10c) will always outrank candidates which cross-reference the object by both devices (10a). Consequently, (10a) should be universally excluded.[4]

(10) **Input:** Obj

	XRef	CL[$_X$	*agree	*clitic	AgrS
a. AgrO CL			*****	*****	
☞ b. AgrO			*		
☞ c. CL				*	

Thus, in Woolford's system double cross-referencing of a single argument by a clitic and agreement is in general excluded. While this is the correct prediction for many languages, we will see in the next session that this claim is empirically to strong.

3 Clitic-Agreement Doubling

A number of languages show coocurrence of pronominal clitics and agreement in the same clause expressing features of the same argument. In the following, I will call this phenomenon *Clitic-Agreement Doubling* (CAD). Thus, Gerlach (2001) observes for Piattino, an Italian dialect spoken in Northern Italy, that subject clitics (*a* in (11)) and agreement (*-i* in (11)) can coocur in a number of cases:

(11) *mi (a) guard-i*
I I watch-1SG
'I am watching'

The possibility to drop the subject clitic crucially depends on person and number of the pronominal subject. It is obligatory in the 2pl where there occurs never a clitic, optional for singular subjects and impossible with 1st and 3rd person plural:

(12) **Clitic-Agreement Doubling in Piattino (full paradigm)**

1sg	(**a**)	*guard*-**i**	**1pl**	**an**	*guarda*
2sg	(**te**)	*guard*-**esc**	**2pl**	—	*guard*-**é**
3sg	(**a/la**)	*guarda*	**3pl**	**li**	*guard*-**en**

There is a tendency here to avoid coocurrence of clitics and agreement, and mark subject features by at least one marker. However, this observations are not without exception. Thus, 3sg

[4] Recall from the discussion of Selayarese that clitics and agreement can coocur if they do not express features of the same argument.

and 1pl both have no agreement but only the 1pl requires appearance of the clitic, and in the 3pl, both types of marking are obligatory.

A similar case of Clitic-Agreement Doubling can be observed in many varieties of Bavarian (Weiss, 1998). Thus in (13a) both the clitic *-ma* and the agreement marker *-n* have to coocur.[5] (13b) shows the possible coocurrence of clitic and agreement with a full pronoun (*du*):

(13) a. *wem-**ma** af Minga fahr-**n***
when-we to Munich drive-1pl
'when we drive to Munich'

b. *wenn-**sd** (du) af Minga kimm-**st***
when-you you to Munich come-2sg
'when you (sg.) come to Munich'

As in Piattino coocurrence possibilities depend on the specific person and number of the subject (see Weiss, 1998, for details). A third case of Clitic-Agreement Doubling can be observed in the Algonquian language Potawatomi (Hockett, 1966) according to the analysis of Halle and Marantz (1993). Halle and Marantz discuss the following example which is analyzed by Hockett (and most other Algonqianists) as containing agreement suffixes and prefixes:

(14) ***k-** wapm -a -s'i **-m** -wapunin -uk*
2 see INV NEG 2pl PRET 3pl
'you (pl.) didn't see them' (Potawatomi)

This analysis is problematic for their approach, which seeks to minimizes multiple exponence in affixation, since the "prefix" *k-* and the suffix *-m* both express the feature "2nd person" for the subject. They argue that the prefixes are actually not agreement markers, but clitics: ". . .1st, 2nd and certain 3rd person pronominal DPs . . . clitizize to the front of the CP and are realized as proclitics in this position. . . . Since the tensed verb also agrees with the 1st and 2nd person arguments, what looks like multiple exponence results" (Halle and Marantz, 1993:140).

Analyzing pronominal "prefixes" as clitics is supported by the fact ". . . that the clitics appear on phonological words that are independent from the inflected verb, clearly indicating that these clitics are not (directly) part of the inflectional system." (Halle and Marantz, 1993:140)

(15) **Separation of pronominal "prefixes" and the verb**

a. *n-**ku** wapm-a* 'OK I'll see'
1-OK see

b. *n-**kuko?** ns'-a* 'I kill him quickly'
1-quickly kill

c. *n-**wep** ns'-a* 'I start to kill him'
1-INCEP kill

[5]Pronominal clitics in Bavarian are often treated as cases of complementizer agreement. However, *-ma* in (13a) also occurs after the verb if this is in verb-second position, such as in *af Minga fahr-**n-ma***, 'To Munich, we drive'.

Ironically, Halle and Marantz claim that it is a basic property of clitics and agreement that they can coocur, while this is excluded for principled reasons in Woolford's approach. In the following section, I will show that the truth is somewhere in the middle. Clitic-Agreement Doubling is in principle possible, but it is excluded in many contexts due to specific constraints. I will focus on another Algonquian language which is closely related to Potawatomi, but much better documented, namely Menominee (Bloomfield, 1962).

4 Clitic-Agreement Doubling in Menominee

Note first that Menominee shows basically the same type of Clitic-Agreement Doubling as Potawatomi for subjects (16a) and objects (16b):[6]

(16) **Clitic-Agreement Doubling in Menominee**

a.	***ne**-po·se-m-**enaw* **1**-embark-[-3]-**1**pl	'**we** (excl.) embark' (p. 148)
b.	***ke**-na·tom-**enenɛ**-m-uaw* **2**-call-[+Nom]:[+Acc+**2**]-[-3]-1pl	'I call **you (pl.)**' (p. 157)

In the following, I will restrict myself to a discussion of object marking by two morpheme types: pronominal "prefixes", which I take to be clitics and "theme" markers such as *-enenɛ* which occur only in transitive forms and encode in a complex manner the relation of subject and object.[7] I will assume that theme markers are portmanteau agreement affixes containing distinct feature structures corresponding to different syntactic heads for subject and object agreement.[8] Following Halle and Marantz (1993), subject and object agreement is distinguished by the case features "+Nom" and "+Acc". I will show that coocurrence of clitics and theme markers does not mean that their appearance is completely independent from each other.

Menominee has two major inflectional paradigms for verbs which are traditionally called "independent order" (mainly used in main clauses) and "conjunct order" (mainly used in subordinate clauses) in the Algonqianist literature. Interestingly, the distribution of both, pronominal clitics and theme markers, differs in these orders. In independent order forms, 1st and 2nd person objects are always marked by clitics ((17),(18)). If the subject is also 1st or 2nd person, also the theme markers express the person feature of the object (17):

[6] Page numbers with Menominee examples refer to Bloomfield (1962).

[7] See Trommer (2003b) for a more detailed analysis of Menominee theme markers.

[8] Halle and Marantz (1993) argue that Potawatomi theme markers can be analyzed as agreement markers corresponding to a *single* syntactic head. See Trommer (2003c) for arguments that their analysis is untenable for Menominee.

(17) **1/2 → 1/2 forms (independent order)**

a. *ke-na·tom-**enen**ϵ-m-enaw* ‘we call you (sg./pl.)’ (p. 156)
call-**[+Nom]:[+Acc+2]**-[+3]-1pl

b. *ke-nϵ·w-**e**-m* ‘you (sg.) see me’ (p. 156)
see-**[+Nom]:[+Acc+1]**-[-3]

However, if the subject is 3rdperson, the alternative theme marker *-eko* is used which indicates that the object is animate:

(18) **3 → 1/2 forms (independent order)**

a. *ne-na·n-**eko**-w* ‘he fetches me’ (p. 154)
1-fetch-**[+Nom]:[+Acc+an]**-[+3]

b. *ke-na·n-**eko**-w* ‘he fetches you (sg.)’ (p. 154)
2-fetch-**[+Nom]:[+Acc+an]**-[+3]

In the conjunct order, clitics are completely suppressed for all forms. Here *-e* and *-enenϵ* are used for all forms with a 1st or 2nd person object:

(19) **1/2 → 1/2 forms (conjunct order)**

a. *na·tom-**enen**ϵ-an* ‘when I call you (sg.)’ (p. 183)
call-**[+Nom]:[+Acc+2]**-[-3]

b. *nϵ·w-**e**-yan* ‘when you (sg.) see me’ (p. 181)
see-**[+Nom]:[+Acc+1]**-[-3]

(20) **3 → 1/2 forms (conjunct order)**

a. *na·tom-**enen**ϵ-k* ‘when he calls you (sg.)’ (p. 183)
call-**[+Nom]:[+Acc+2]**-[+per]

b. *nϵ·w-**e**-t* ‘when he sees me’ (p. 181)
see-**[+Nom]:[+Acc+1]**-[+3]

The table in (21) the differences between the two orders in the distribution of theme markers. The distributions of clitics and theme markers in Algonquian are usually considered to be rather independent problems. However, if we view them together here, a striking generalization for forms with 3rd person subjects and non-3rdperson objects (3 → 1/2) emerges: If [+1] and [+2] are marked by clitics (in the independent order), theme marking expresses the feature [+an] (*-eko*). If [+1] and [+2] are not marked by clitics (in the conjunct order), theme marking expresses [+1]/[+2] (*-e/enenɛ*). In other words, the grammar takes care that [+1] and [+2] are always expressed, either by clitics or by theme markers. This shows a strong resemblance to the clitic/agreement alternations analyzed by Woolford (see section 2), and leaves us with the puzzle why the realization of clitics and agreement seems to be independent from each other in some respects and to interact with each other in other respects.

(21) **Distribution of *-e, -eko* and *-enenϵ***

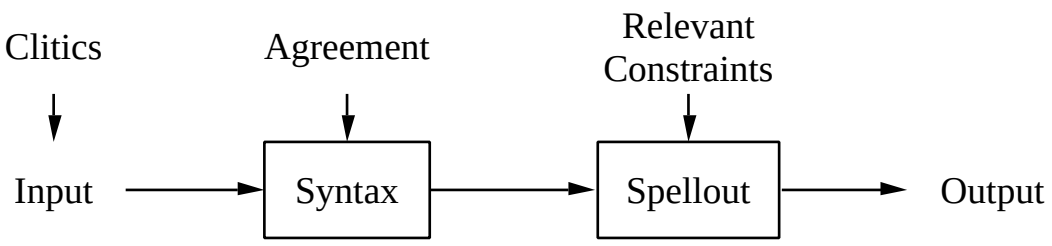
	Independent Order		Conjunct Order	
-e	2	→ 1	2	→ 1
	3	→ 1	3	→ 1
-eko	[-an]	→ 1	[-an]	→ 1
	[-an]	→ 2	[-an]	→ 2
-enenϵ	3	→ 2	3	→ 2
	1	→ 2	1	→ 2

The solution I will propose in the following section is based on the idea that the distribution of clitics and agreement markers is not the result of syntactic constraints on cross-referencing, but of spell-out constraints over different syntactic domains.

5 Head-Level and Chain-Level Constraints on Spellout

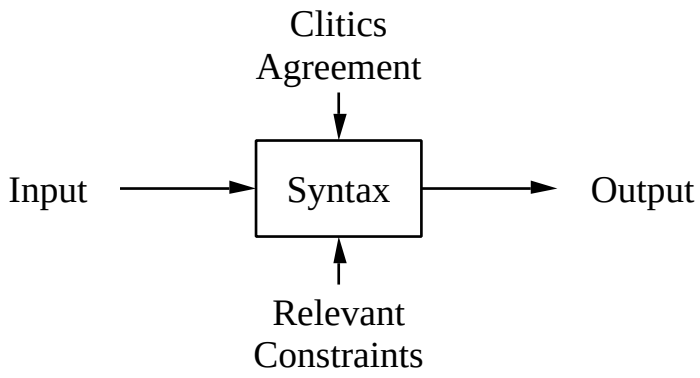
The architecture of the grammar I assume here is Distributed Optimality (DO; Trommer, 2002a, 2003d,b), a postsyntactic approach to morphological spellout on the basis of Optimality Theory. A basic assumption of DO is that morphosyntax comprises two serially ordered optimization processes, one purely syntactic (Syntax), assembling complex tree structures without phonological content, and a second one which takes the output of Syntax as input and assigns to it vocabulary items which pair (possibly underspecified) morphosyntactic features with phonological content (Spellout).[9] (22) and (23) show schematically how this architecture differs from the more monolithic one implicitly assumed in Woolford (2003). ”Relevant constraints” stands for the constraints which govern (non-)appearance of agreement and clitics.

(22) **Architecture of morphosyntax in DO**



[9]This architecture is identical to the one in Trommer (2003c), which however assumes a single local domain for spellout constraints. Trommer (2002b) develops an approach to spellout with different constraint domains which – in contrast to the account here – locates application in different domains to two different, serially ordered postsyntactic modules.

(23) **Architecture of morphosyntax in Woolford (2003)**



In contrast to the model without a separate spellout components, I assume that in a language like Menominee agreement and clitic heads are present for all arguments after syntax. Hence, as in the framework of Halle and Marantz (1993), there is free coocurrence of clitics and agreement marking for the same argument. Spellout constraints just block their morphological realization in specific contexts.

At the core of my analysis is the assumption that spellout constraints can apply in different local domains.[10] More specifically, I assume the three domain types in (24):

(24) **Domains for spellout constraints**

Head Domain:	A set of string-adjacent heads belonging to the same extended projection
Chain Set:	The set of heads which are members of the chain C
Chain Domain:	A set S such that there exists a Head Domain D and S contains all heads of all chain sets occupying a position in D

The most straightforward of these domains is the Chain Set. I assume that coindexed clitics and agreement markers always are part of a chain with the schematic form in (25) (order irrelevant):

(25) DP_i $Clitic_i$ V Agr_i

The Chain Set then amounts to $\{Clitic_i, Agr_i\}$ if DP_i is syntactically complex and to $\{Clitic_i, Agr_i, DP_i\}$, if DP_i is a bare head. Crucially, only indexed heads are visible for Chain Sets.

A Head Domain[11] is roughly equivalent to the traditional notion of "morphological word". A simple example is a sequence of a verb stem with Tense, subject, and object agreement heads ([+V][+Tense] [+Agr +Nom] [+Agr +Acc]). Note that the exact tree structure configuration of the heads is irrelevant for the definition of a Head Domain. Thus, [+V] could be placed adjacent to [+Tense] by head movement to Tense or by remnant movement of a phrase containing [+V]

[10] This is analogous to OT-approaches to phonology, where phonological constraints apply in different prosodic domains such as the syllable or the phonological word.

[11] Head Domains are called spellout domains in Trommer (2003c)

to a higher specifier position. Important is only string adjacency. Another instance of a Head Domain that will become relevant are clitic clusters.

Finally, Chain Domains combine Head Domains with Chain Sets. In other words, a Chain Domain is a Head Domain plus all heads contained in chains with a position in this Head Domain. I will call constraints applying in Head Domains *Head-Level Constraints* constraints applying in Chain Domains *Chain-Level Constraints*, and constraints on Chain Sets *Chain Constraints*. (26) and (27) illustrate how Chain-Level and Head-Level Constraints apply to coindexed clusters of agreement and clitic markers which I take to be the crucial configuration relevant for Menominee (coindexing is marked here by superscripts):

(26) **Head-Level Constraints**

Output	$\text{Agr}_o^1\ \text{Agr}_o^2 \ldots \text{Agr}_o^3$	$\text{CL}_o^1\ \text{CL}_o^2 \ldots \text{CL}_o^3$
	↑	↑
Input:	$\text{Agr}_i^1\ \text{Agr}_i^2 \ldots \text{Agr}_i^3$	$\text{CL}_i^1\ \text{CL}_i^2 \ldots \text{CL}_i^3$

(27) **Chain-Level Constraints**

Output	$\text{Agr}_o^1\ \text{Agr}_o^2 \ldots \text{Agr}_o^3 \quad \text{CL}_o^1\ \text{CL}_o^2 \ldots \text{CL}_o^3$
	↑
Input:	$\text{Agr}_i^1\ \text{Agr}_i^2 \ldots \text{Agr}_i^3 \quad \text{CL}_i^1\ \text{CL}_i^2 \ldots \text{CL}_i^3$

I will further assume the inventory of spellout constraints developed in Trommer (2002a, 2003d,b,a):

(28) **Constraint types in Distributed Optimality (Trommer, 2002a, 2003d,b)**

PARSE F:	Realize syntactic features by morphemes
PARSE F_1/F_2:	Realize the hierarchically higher feature (F_1) in the context of a lower feature (F_2)
COHERENCE X:	Allow only one morpheme of type X in the output

PARSE F is a basic faithfulness constraint counting a violation for each syntactic feature which is not expressed overtly by a morpheme (vocabulary item). **COHERENCE** is a general constraint format restricting coindexing (see Trommer, 2003a, for details). In the rankings we will consider here, it simply has the effect of restricting the occurrence of vocabulary items of type *X* to one. Relativized PARSE constraints (**PARSE F_1/F_2**) encode preference for more prominent features. Thus PARSE [+2]/[+3] states that the feature [+2] should be realized by a VI if it is in the same relevant domain with the feature [+3]. Similarly, PARSE $[+\text{an}]^{[+2]/[+3]}$ requires that the feature [+an(imate)] be realized if it is associated with a syntactic [+2] head coocurring in the relevant domain with a [+3] head. Relativized PARSE constraints are related to feature hierarchies such as [+2]/[+1] $>$ [+3] by general mapping schemata (see Trommer, 2002a).

(29) shows how PARSE constraints allow to derive a simple case of Clitic-Agreement Doubling. I assume that the high-ranked constraints COHERENCE [+Nom][+Acc] and COHERENCE [+CL] (omitted in the tableaus) exclude all candidates with more than one theme marker or clitic. The crucial constraints are then two constraints both requiring realization of [+2] over [+1][12], but in different domains: Head and Chain Domain, where *ke-* realizes [+2] for clitics (and the chain) and *-enenɛ* for agreement (and the chain). To satisfy the constraint in the Head Domain, both markers have to appear, since there are two underlying domains containing the features [+2] and [+1]. PARSE [+an]$^{[+2]/[+1]}$ which favors the theme marker *-eko*:[+an] is ineffective since outranked by the PARSE [+2]/[1] constraints.

(29) **Input:** [+Cl+Nom+1]$_1$ [+Cl+Acc+2]$_2$ **IND** [+Agr+Nom+1]$_1$ [+Agr+Acc+2]$_2$

	PRS [+2]/[+1]	PRS [+2]/[+1]	PRS [+an]$^{[+2]/[+1]}$
-enenɛ:[+2]		*!	*
-eko:[+an]	*!	**	
ke:[+2]- -eko:[+an]		*!	
☞ ke:[+2]- -enenɛ:[+2]			*
ne:[+1]- -enenɛ:[+2]		*!	*
Domain:	**Chain**	**Head**	**Chain**

I assume that clitics are suppressed in the conjunct order by the constraint *CL/CONJ[13]. This blocks the appearance of *ke*:[+2]- in 1 ➔ 2 forms, but yields otherwise the same results:

(30) **Input:** [+Cl+Nom+1]$_1$ [+Cl+Acc+2]$_2$ **CONJ** [+Agr+Nom+1]$_1$ [+Agr+Acc+2]$_2$

	*CL/CONJ	PRS [+2]/[+1]	PRS [+2]/[+1]	PRS [+an]$^{[+2]/[+1]}$
☞ -enenɛ:[+2]			*	*
-eko:[+an]		*!	**	
ke:[+2]- -eko:[+an]	*!		*	
ke:[+2]- -enenɛ:[+2]	*!			*
ne:[+1]- -enenɛ:[+2]	*!		*	*
Domain:	**Head**	**Chain**	**Head**	**Chain**

Things are different with 3rd person subjects and [+1] or [+2] objects. The corresponding relativized PARSE constraint for [+an] is now ranked above the constraint for [+2] itself in the Head Domain, while still below the relevant constraint for the Chain Domain. Since there is no other way to express [+an] this enforces appearance of *-eko*:[+an] instead of *-enenɛ* :[+2]

[12] 2nd person is more prominent than 1st person in most Algonquian languages. See Dechaine (1999) for arguments.

[13] Alternatively, one might assume that the syntax of conjunct order forms does not allow clitics. This would not substantially change the analysis proposed here.

(31) **Input:** $[+Cl+Nom+3]_1$ $[+Cl+Acc+2]_2$ **IND** $[+Agr+Nom+3]_1$ $[+Agr+Acc+2]_2$

	*CL/ CONJ	PRS [+2]/[+3]	PRS $[+an]^{[+2]/[+3]}$	PRS [+2]/[+3]
-enenɛ:[+2]			*!	*
-eko:[+an]		*!		**
☞ ke:[+2]- -eko:[+an]				*
ke:[+2]- -enenɛ:[+2]			*!	

Domain: **Head** **Chain** **Chain** **Head**

The choice for a theme marker is reversed in the conjunct order. Since the clitic expression of [+2] is not available here, *-enenɛ*:[+2] is chosen instead of *-eko*:[+an] to satisfy the higher-ranked [+2]/[+3] constraint in the Chain Domain.

(32) **Input:** $[+Cl+Nom+3]_1$ $[+Cl+Acc+2]_2$ **CONJ**$[+Agr+Nom+3]_1$ $[+Agr+Acc+2]_2$

	*CL/ CONJ	PRS [+2]/[+3]	PARSE $[+an]^{[+2]/[+3]}$	PRS [+2]/[+3]
☞ -enenɛ:[+2]			*	*
-eko:[+an]		*!		**
ke:[+2]- -eko:[+an]	*!			*
ke:[+2]- -enenɛ:[+2]	*!		*	

Domain: **Head** **Chain** **Chain** **Head**

Let us consider two crucial aspects of the analysis developed so far: First, the use of relativized PARSE constraints makes it possible to differentiate succinctly details of prominence effects such as the fact that the Algonquian person hierarchy ($2 > 1 > 3$) leads normally to the theme markers *-enenɛ* and *-e* for 1 ➔ 2 and 2 ➔ 1 forms, but to *-eko* for 3 ➔ 1/2 forms. Second, it is crucial to assume PARSE constraints in two domains: Relativized PARSE constraints in the Head Domain derive coocurrence of coindexed clitic and agreement marker because both underlying heads have to be realized. Relativized PARSE constraints in the Chain Domain are needed to express that suppression of a [+2] clitic (by the general ban on clitics in the conjunct order) causes emergence of the otherwise blocked theme marker specifying [+2] (*-enenɛ*). In the next section, we will see further evidence that Menominee – despite the general possibility of Clitic-Agreement Doubling - obeys coocurrence constraints at the Chain Level.

6 The 3rd person Restriction in Menominee

Menominee has a rich inventory of clitics and agreement markers indicating the contrast between 3rd person and non-3rd arguments. Thus, intransitive independent forms with a 1st or 2nd person subject take the suffix *-m* while corresponding forms with a 3rd person subject take *-w*:

(33) **Menominee [+/-3] suffixes**

a. *ne-po·se-**m*** ‘I embark’
1-embark-[-3]

b. *ke-po·se-**w*** ‘you (sg.) embark’
2-embark-[+3]

c. *po·se-**w*** ‘he embarks’
embark-[+3]

In transitive verbs, when one argument is 3rd and the other non-3rd, only one suffix appears. This is usually *-w* (34a,b), but in some specific cases *-m* (34c). In most negated forms and some affirmative contexts, the contrast between [+3] and [-3] is neutralized by the use of the default affix *-n:* (34d,e):

(34) **Restriction to one [+/-3] suffix in transitive forms**

a. *ne-na·n-a·-**w*** ‘I fetch him’
1-fetch-D-[+3]

b. *ne-na·n-ek-**w*** ‘he fetches me’
1-fetch-D-[+3]

c. *ke-nɛ·qn-ek-**m**-uaw* ‘it kills you (pl.)’ (p. 154)
shade-D-PER

d. *ne-po·na·-**n*** ‘I put it in the pot’ (p. 159)
1-pot:put-D-PER

e. *ne-nɛ·wa·-**n**-an* ‘I do not see him’ (p. 169)
1-see-D-PER-NEG

While a full account of 3rd person marking in Menominee is far beyond the scope of this paper, there is obviously a restriction against two vocabulary items specified for the feature “3’ which I capture by the constraint COHERENCE [+/-3]. Together with PARSE F this derives the fact that in transitive forms there appears always exactly one [+/-3] suffix.

(35) **Input:** [+3] [-3]

	COH [+/-3]	PARSE F
☞ -w		*
☞ -m		*
-w-m	*!	
Ø		**!

This leads to the question whether COHERENCE [+/-3] applies in the Head- or the Chain Domain. In fact, Menominee has also a 3rd-person clitic (“prefix”):

(36) **3rd person clitic with nouns and verbs (animate arguments)**

a. ***o-****hka·t* ‘his leg’
3-leg

b. ***o-****po·se-n-an* ‘he doesn’t embark’
3-embark-PER-NEG

While the distribution of *o-* is again complex, for example it occurs with animate and inanimate arguments in noun forms ((36a),(37a)), but only with animate arguments in verb forms ((36b),(37b)), *o-* never coocurs with *-m* or *-w*.

(37) **3rd person clitic with nouns and verbs (inanimate arguments)**

a. ***o-****hka·t* ‘its leg (chair)’
3-leg

b. *mɛhki·**-w-**an* ‘it isn’t red’
red-3-NEG

In other words, 3rdperson marking in Menominee evidences Clitic-Agreement Complementarity which is strong evidence that COHERENCE [+/-3] is a Chain-Level Constraint.

7 Selayarese Revisited

Let us now return to Selayarese and see whether the distribution of clitics and agreement in this language can be captured equally well by Head- and Chain-Level Constraints. The generalization that a certain argument can only be expressed by a clitic *or* an agreement marker can be expressed by the general constraint COH [ ] which allows only one item of any type in its domain. If the relevant domain is the Chain Set, this amounts to penalizing Clitic-Agreement Doubling as in (38a). Preference for the realization of the clitic head can be captured by a relativized PARSE constraint favoring realization of the feature [+Cl] over [+Agr]. I adopt Woolfords’s constraint AgrS requiring subject agreement for a given chain set (cf. section 2). Note that all constraints apply in Chain Sets (i.e., single chains), not in Chain Domains.

(38) **Input: [+Cl +Nom]$_1$ [+Agr+Nom]$_1$**

	COH [ ]	PRS [+Cl]/[+Agr]	AgrS
a. [+Agr+Nom]$_1$ [+Cl+Nom]$_1$	*!		
b. [+Agr+Nom]$_1$		*!	
☞ c. [+Cl+Nom]$_1$			*
Domain:	**Chain Set**	**Chain Set**	**Chain Set**

For transitive forms, an additional COHERENCE constraint is needed (COH CL) which allows

only one clitic in a Head Domain and hence blocks (39d) PRS [+Cl]/[+Agr] then excludes expression of subject and object features by agreement (39c) and AgrS favors (39a) over (39b):

(39) **Input: $[+Cl\ +Nom]_1[+Cl\ +Acc]_2$ $[+Agr+Nom]_1[+Agr+Acc]_2$**

	COH CL	COH [ ]	PRS [+Cl]/[+Agr]	AgrS
☞ a. $[+Agr+Nom]_1\ [+Cl+Acc]_2$			*	
b. $[+Cl+Nom]_1\ [+Agr+Acc]_2$			*	*!
c. $[+Agr+Nom]_1\ [+Agr+Acc]_2$			**!	
d. $[+Cl+Nom]_1\ [+Cl+Acc]_2$	*!			*
Domain:	**Head Set**	**Chain Set**	**Chain Set**	**Chain Set**

Note that most constraints used here correspond straightforwardly to constraints in Woolford's analysis of Selayarese. This is trivially true for AgrS. COH CL has the same effects as $CL[_X$. PARSE [+Cl]/[+Agr] effects a general preference for clitic expression which is roughly analogous to *agree. The symmetric constraint [+Agr]/[+Cl] emulates *clitic. Finally PARSE F (omitted in the preceding tableaus) is parallel to XRef.[14] The only constraint which has no counterpart in Woolford's analysis is COHERENCE [ ] since its effects follow from the interaction of the other constraints in Woolford's approach. However, this property is just what makes her approach problematic to account for Clitic-Agreement Doubling in Algonquian and other languages which would be excluded in principle.

8 A Partial Typology for Cross-Referencing

Let us finally examine to which degree the proposed constraints can derive the typology of cross-referencing patterns proposed by Woolford, repeated here as (40). We will see that they make it possible to derive the first three patterns which involve cross-referencing of all arguments while pattern (iv) and (v) without cross-referencing for objects (and subjects) cannot be captured.

(40) **Predicted patterns**

(i) all eligible arguments cross-referenced with agreement
(ii) all eligible arguments cross-referenced with clitics
(iii) subject agreement plus object clitic(s)

(iv) just subject agreement
(v) no cross-referencing at all

Cross-referencing of all eligible arguments with agreement takes place if COH [ ] and PARSE [+Agr]/[+Cl] are ranked above PARSE [+Cl]/[+Agr], where the ranking of AgrS and the relative

[14] This is only true if PARSE F applies in the Chain Domain.

ranking of COH [ ] vs. PARSE [+Agr]/[+Cl] are irrelevant. This is shown for one specific ranking in (41). COH [ ] excludes all candidates with Clitic-Agreement Doubling (omitted in the tableau), and PARSE [+Agr]/[+Cl] favors (41a) which is also optimal for AgrS:

(41) **Input: [+Cl +Nom]$_1$[+Cl +Acc]$_2$ [+Agr+Nom]$_1$[+Agr+Acc]$_2$**

	COH [ ]	PRS [+Agr]/[+Cl]	PRS [+Cl]/[+Agr]	AgrS
☞ a. [+Agr+Nom]$_1$ [+Agr+Acc]$_2$			**	
b. [+Cl+Nom]$_1$ [+Cl+Acc]$_2$		*!*		*
c. [+Agr+Nom]$_1$ [+Cl+Acc]$_2$		*!	*	
d. [+Cl+Nom]$_1$ [+Agr+Acc]$_2$		*!	*	*
e. [+Cl+Nom]$_1$		*!*	*	*
f. [+Agr+Nom]$_1$		*!	**	
g. [+Cl+Acc]$_1$		*!*	*	*
h. [+Agr+Acc]$_1$		*!	**	*
i. Ø		*!*	**	*

All arguments are cross-referenced by clitics if PARSE [+Cl]/[+Agr] and COH [ ] are ranked higher than the other two constraints, where the relative ranking of PARSE [+Cl]/[+Agr] with respect to COH [ ] and the ranking of AgrS with respect to PARSE [+Agr]/[+Cl] are irrelevant. COH [ ] again excludes Clitic-Agreement Doubling, and PARSE [+Cl]/[+Agr] favors (42b):

(42) **Input: [+Cl +Nom]$_1$[+Cl +Acc]$_2$ [+Agr+Nom]$_1$[+Agr+Acc]$_2$**

	COH [ ]	PRS [+Cl]/[+Agr]	PRS [+Agr]/[+Cl]	AgrS
a. [+Agr+Nom]$_1$ [+Agr+Acc]$_2$		*!*		
☞ b. [+Cl+Nom]$_1$ [+Cl+Acc]$_2$			**	*
c. [+Agr+Nom]$_1$ [+Cl+Acc]$_2$		*!	*	
d. [+Cl+Nom]$_1$ [+Agr+Acc]$_2$		*!	*	*
e. [+Cl+Nom]$_1$		*!	**	*
f. [+Agr+Nom]$_1$		*!*	*	
g. [+Cl+Acc]$_1$		*!	**	*
h. [+Agr+Acc]$_1$		*!*	*	*
i. Ø		*!*	**	*

Subject agreement with object clitics, but without subject clitics and object agreement can be derived by rankings of the form {COH [ ], AgrS} ≫ PRS [+Cl]/[+Agr] ≫ PRS [+Agr]/[+Cl]. AgrS requires subject agreement blocking subject clitics, but preference for clitics by PARSE [+Cl]/[+Agr] emerges for objects resulting in object clitics:

(43) **Input: [+Cl +Nom]$_1$[+Cl +Acc]$_2$ [+Agr+Nom]$_1$[+Agr+Acc]$_2$**

	COH [ ]	AgrS	PRS [+Cl]/[+Agr]	PRS [+Agr]/[+Cl]
a. [+Agr+Nom]$_1$ [+Agr+Acc]$_2$			**!	
b. [+Cl+Nom]$_1$ [+Cl+Acc]$_2$		*!		**
☞ c. [+Agr+Nom]$_1$ [+Cl+Acc]$_2$			*	*
d. [+Cl+Nom]$_1$ [+Agr+Acc]$_2$		*!	*	*
e. [+Cl+Nom]$_1$		*!	*	**
f. [+Agr+Nom]$_1$			**!	*
g. [+Cl+Acc]$_1$		*!	*	**
h. [+Agr+Acc]$_1$		*!	**	*
i. Ø		*!	**	**

As Woolford's typology, this constraint inventory excludes all implausible patterns in (43), namely (43d,e,g,h) since all of these are harmonically bounded by (43c) and can hence never become optimal. However, also the attested patterns (iv) ("just subject agreement") and (v) ("no cross-referencing at all") cannot be derived in this system. The corresponding candidates ((43f) and (43i)) are also harmonically bounded by (43c) (and other candidates). The tentative solution I propose for this problem is to locate the reasons for complete absence of subject and object cross-referencing not in spellout constraints, but to treat it as a consequence of syntax proper. This is plausible since a system with a syntactic cross-referencing mechanism for subject and object which is completely suppressed by the spellout component would be highly intransparent and pose severe learnability problems.

A pattern which is excluded in Woolford's typology, but possible under the assumed constraints is Clitic-Agreement Doubling for all arguments, which would result from ranking PARSE [+Cl]/[+Agr] and PARSE [+Agr]/[+Cl] above COH [ ]. While I know of no language which instantiates this extreme possibility, Menominee partially approximates it. There is still relatively few crosslinguistic evidence for the exact extent to which Clitic-Agreement Doubling is possible. Therefore, I will leave this point to future research.

9 Summary

In this paper, I have shown that clitics and agreement can in principle coocur in the same clause cross-referencing the same argument, which causes problems for accounts like Woolford (2003) which generally exclude this possibility. I have proposed an alternative account of Clitic-Agreement Doubling and Clitic-Agreement Complementarity, based on spellout constraints and different structurally defined domains, which captures the intricate patterns of clitic-agreement dependencies in Menominee, but also allows to restate Woolford's analysis of Selayarese and most of the factorial typology she suggests for cross-referencing patterns crosslinguistically.

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