Clitic-Agreement Doubling in Yurok

1 Abstract

In Clitic-Agreement Doubling, phi-features of the same verbal argument are simultaneously expressed by pronominal clitics and verbal agreement. The Algic language Yurok (Robins, 1958) exhibits Clitic-Agreement Doubling (CAD) in specific syntactic contexts requiring clitics in addition to agreement, but provides also strategies to avoid this type of redundancy by suppressing otherwise expected agreement affixes. In this paper, I propose an optimality-theoretic analysis of CAD in Yurok based on spell-out constraints on different syntactic domains: head complexes, chains and sets of chains related to head complexes (Trommer, 2003e). I show that the morphosyntactic system of Yurok in this area despite of many different details functions similarly as the one of Algonquian languages, especially Menominee (Bloomfield, 1962).

2 Introduction

Yurok is an almost extinct Algic language from Northwest California[1] documented primarily by the structuralist grammar of Robins (1958). In the simplest Yurok intransitive sentences, verb forms have distinct subject agreement suffixes for the standard categories 1st/2nd/3rd singular and plural, but no other coreferencing of subject features. (1) shows this for the verb **ko?moy**, 'to hear' (pg. 34)[2]:

(1) Standard Intransitive Forms of *ko?moy*, 'to hear'[3]

	Singular	Plural
1	ko?moy-o**-k'**	ko?moy-o**-h**
2	ko?moy-o**-?m**	ko? moy-o**-?w**
3	ko?mo**?**y	ko? moy-o**-ł**

In specific syntactic contexts such as subordinate clauses and certain conjunctions and adverbs, in addition to agreement suffixes also subject clitics appear.[4]

1 Algic comprises Yurok, Wiyot and the Algonquian, which is one of the most widespread families among Amerindian languages.

2 Page numbers refer to Robins (1958).

3 All agreement affixes are printed in boldface.

4 These clitics are also used to mark nominal possession.

(2) Intransitive Forms with Clitics of *tmo·l*, 'to shoot' (pg. 51)

	Singular	**Plural**
1	**(?)ne**-tmo·l-o**-k'**	**(?)ne**-tmo·l-o**-h**
2	**k'e**-tmo·l-o**-k'**	**k'e-**tmo·l-o**-?w**
3	(**?)we**-tmo·l-o**-k'**	**(?)we**-tmo·l-o**--ł**

While Robins calls these clitics prefixes since they usually appear left-adjacent to the verb stem, they can be separated from verb forms by adverbs or adverbial phrases forming separate phonological words arguing strongly for their clitic status:[5]

(3) Clitics Non-Adjacent to the Verb (pg. 58)

. a. niki **?u-**ko·si **ten**
All 3-everywhere rain(uninflected)
'It was raining everywhere' (Robins, 1958:58)

b. ?iki newo·k' ku **k'e-**sku?y so· **?o·k'**
then see-1sg COMP 2-good so live-AGR
'then I saw that you lived a good life'

c. kem ki niki **k'e-**so· **negemek'**
again FUT CONS 2-thus carry-AGR
'And then you will carry it in this way'

Now, the plural forms in (2) exhibit Clitic-Agreement Doubling: the clitics instantiate a three-way person contrast, and so do the clitics. So we might infer that **k'e-**, but also **-?w** specify the feature [+2] (plus probably additional features). On the other hand, in the singular forms the three-way contrast in the clitics and the suffixes of the forms without clitics neutralizes to the affix used (**-k'**) with 1sg forms in the forms with clitics.

There are in principle two ways to analyze **-k'**. First, as a 1sg-affix which is extended for some reason to specific 2nd and 3rd person forms. Second, **-k'** might be viewed as a default agreement marker which appears in forms without clitics by the Elsewhere Principle since there is no more specific marker, and in forms with clitics where more specific singular markers are suppressed. Since the insertion of affixes specifying features not present in syntax is marked and probably excluded in Universal Grammar (cf. Trommer, 2003d), I will assume in the following the latter alternative.

Viewing **-k'** as a default agreement marker has a further advantage: Suppression of **-?m** and **-?** can now then be seen as the consequence of a ban against too many markers specifying the same features Thus **-?m** marks the feature [+2], but **k'e-** also does. **-?m** additionally signals the syntactic presence of agreement, but this can also be achieved by **-k'** without the redundant appearance of two instances of the feature [+2]. That there is no neutralization in the plural forms is plausibly linked to the fact that there is no other way to express the feature plural without using one of the specific plural affixes. Similarly, the person contrast in the clitics is not suppressed since there is no default clitic in the

5 Note that the 3rd person clitic **we-** has the allomorph **?u-** in specific phonological contexts.

inventory, hence the only way to signal syntactic presence of clitics is to use one of the three clitics with full person specification. The optimality-theoretic analysis in the following sections is a formal implementation of these basic ideas, and extends them to transitive verb forms with object agreement, which only partially exhibit the neutralization of person agreement in the context of clitics. For example in (4b), instead of 3sg **-?en**, default agreement **-k'** appears, but in (4c) the 3sg marker is retained:

(4) Transitive Forms with Clitics (pg. 75)

a. **ne-**ko?moyo-ce**-k'** 'I hear you (sg.)'
1-hear-O2sg-AGR

b. **u?-**ko?moyo-ce**-k'** 'he hears you (sg.)'
3-hear-O2sg-AGR

c. **?we-**tmo·lo-p**-e?n** 'he shoots me'
3-shoot-O1sg-3sg

The paper is organized as follows: In section 3, I introduce Distributed Optimality, the formal framework I will assume for the rest of the paper. In section 4, I provide an analysis of pronominal clitics in Yurok. Agreement of intransitive forms is discussed in section 5. This analysis is extended to cover transitive forms in section 6. Section 7 discusses parallels of the Yurok phenomena with a similar system in Menominee. In section 8, I show that the proposed account is superior to an alternative analysis by Blevins (2004). Section 9 gives a short summary of the paper.

3 The Theoretical Framework

The theoretical framework I will assume in the following is Distributed Optimality (DO; Trommer, 2002a,b, 2003c,f), a constraint-based approach to postsyntactic spellout merging concepts from Optimality Theory (OT, Prince and Smolensky, 1993; McCarthy and Prince, 1993, 1994, 1995) and Distributed Morphology (DM, Halle and Marantz, 1993). However, most of the arguments should carry over to any OT-based approach to spellout, where morphology has crucial access to syntactic structure (as e.g. in Noyer, 1993; Grimshaw, 1997, 2001b). DO shares with Distributed Morphology the assumption that morphology is a separate module of the grammar interpreting the outputs of syntax, where the latter operates on abstract feature bundles (= heads = Lexical Items) without phonological content. Morphology assigns phonological content to syntactic structures by pairing them with strings of vocabulary items (VIs) which combine (underspecified) morphosyntactic features with phonological content. Here is an illustrative example with the Yurok verb form **nepe-?m**, 'you (sg.) eat':

(5) Syntax-Morphology Mapping for *nepe-?m*

Input:	$[+V]_1$	$[+Tense\ -past]_2$	$[+Agr\ +Nom\ +2\ -pl]_3$
Output:	$nepe:[+V]_1$		$?m:[+Agr\ +2]_3$

The input consists of a list of abstract heads, the output of a list of VIs. Both

representations are linked by coindexing according to the principles of Correspondence Theory (McCarthy and Prince, 1994, 1995).[6] However, in the following I will omit indices wherever they are not relevant (or coindexing is obvious from the context), and notate the categorial features as subscripts to the feature structures to get more concise formula. Thus (6) is equivalent to (5):

(6) Syntax-Morphology Mapping for *nepe-'m*

Input:	$[\ ]_V$	$[\text{-past}]_{\text{Tense}}$	$[\text{+Nom +2 -pl}]_{\text{Agr}}$
Output:	nepe:$[\ ]_V$		'm:$[\text{+2}]_{\text{Agr}}$

Note that not all underlying heads and features are necessarily expressed in the output (e.g. [+Tense -past] and +Nom in (5) are not).

Since the output of syntax serves in DO as the input to morphological computation, the grammar and, more specifically the generator function GEN, generates, as usual in OT, an infinite candidate set of output candidates which contains here all strings which consist exclusively of VIs compatible with input heads. For example, a VI specifying the feature [+3] [7](e.g. ?:$[\text{+3}]_{\text{Agr}}$ could not be part of any candidate for the input in (5) since there is no input head specifying [+3], Put another way GEN generally excludes insertion of features into morphology which are not present in corresponding syntactic structure.

3.1 Constraint Types

Which heads are actually realized by VIs and the order of VIs in a given language depends on the language-specific ranking of universal constraints on markedness, faithfulness and morpheme order. This is illustrated with the example from (5) and one very basic constraint PARSE Φ in (7) disregarding verb and tense head:[8]

(7) Input: $[\text{+Nom +2 -pl}]_{\text{Agr}}$

	PARSE Φ
☞ a. V **?m**:$[\text{+2}]_{\text{Agr}}$	*
b. V **k':**$[\ \ ]_{\text{Agr}}$	**!
c. V	**!*

PARSE Φ induces one constraint violation for each input phi- feature (i.e., person- and number feature) in the input which is not realized by a coindexed VI (e.g. -pl for (7a)). Since there are no appropriate VIs in the lexicon of Yurok to express this feature, violations of PARSE Φ are unavoidable. However, they are minimized to guarantee maximal expression of features by VIs. In a line with PARSE Φ there are also two other

6 Note however that not the VIs themselves are coindexed with lexical items, but the feature structures associated with VIs. Thus a portmanteau VI can contain two distinct feature structures with different indices. See Trommer(2003c) for more details. Trommer (2003c:ch. 4.2) discusses the differences in the basic constraint types of Standard Correspondence Theory and DO.

7 See Trommer (2003c) for technical details.

8 With Halle and Marantz (1993), I assume that agreement heads inherit case features from the DPs with which they agree.

general PARSE features for case features (PARSE case) and categorial features (PARSE cat):

(8) Input: [+Nom +2 -pl]$_{Agr}$

	PARSE Φ	PARSE case	PARSE cat
☞ a. V **?m**:[+2]$_{Agr}$	*	*	
b. V **k':**[ ]$_{Agr}$	**!	*	
c. V	**!*	*	*

Apart from the lack of VIs, also specific higher-ranked constraints can induce violations of PARSE Φ. Constraints of the COHERENCE-type require that maximally one VI of a certain type be present in a word form:

(9) COHERENCE *X*: Allow only one morpheme of type *X* in the output

For example the constraint COHERENCE [3] allows only one instance of the feature [+/-3] in a given output. Each additional instance of this feature leads to constraint violations. An example for such a restriction can be observed in Yurok. In (9-a,b), the 3rd person object is marked by the agreement suffix **-se**. However this is suppressed if the subject is also 3rd person (9-c). The form is hence homophonous with an intransitive 3sg form:

(9) 3rd person object marking (pg. 75)

a. ko?moyo**-se**-k' 'I hear him'
hear-O3sg-AGR

b. ko? moyo**-se-?**m 'you hear him'
hear-O3sg-2sg

c. ko?mo**?**y 'he hears (him)'
hear-3sg

PARSE Φ would favor appearance of the object marker also in forms with 3rd person subjects since in (10-b) the features of the object agreement head remain unexpressed:

(10) Input: [+Nom +3 -pl]$_{Agr}$[+Acc +3 -pl]$_{Agr}$

	PARSE Φ
☞ a. V **se:**[+Acc +3]$_{Agr}$ **?:** [+3]	**
b. V **?:**[+3]$_{Agr}$	***!
c. V **se:**[+Acc +3]$_{Agr}$	***!

Higher ranking of COHERENCE [3] correctly excludes the appearance of both agreement markers:

(11) Input: [+Nom +3 -pl]$_{Agr}$[+Acc +3 -pl]$_{Agr}$

	COH [3]	PARSE Φ
a. V **se:**[+Acc +3]$_{Agr}$ **?:** [+3]	*!	**
☞ b. V **?:**[+3]$_{Agr}$		***
☞ c. V **se:**[+Acc +3]$_{Agr}$		***

However, (11-a) can also be avoided incorrectly by omitting the subject agreement marker and retaining object agreement, as in (11-c). Preference for subject agreement can be related to the general fact that languages prefer agreement for categories which rank higher on prominence hierarchies such as the ones in (12):

(12) Basic Prominence Hierarchies

a. [+Nom] > [+Acc]

b. 1st/2nd Person > 3rd Person

c. Plural > Singular

The effects of such hierarchies on agreement are captured in DO by relativized Parse constraints such as the ones in (14) related to hierarchies by the general constraint schema in (13):

(13) Schema for Relativized Parse Constraints:

If there is a prominence scale A > B and a feature *F*

there is a relativized PARSE constraint PARSE [F]$^{A/B}$

(14) Relativized PARSE Constraints Derived from (12) by (13)

a. PARSE [PER]$^{[+Nom]/[+Acc]}$

b. PARSE [PER]$^{[+2]/[+3]}$

c. PARSE [PER]$^{[+pl]/[-pl]}$

PARSE F$^{A/B}$ is to be read as follows: Realize the feature F of a syntactic head containing A if this is adjacent to a head containing B. Thus, PARSE [P(ER)]$^{[+Nom]/[+Acc]}$ requires that the person features of a [+Nom] head are spelled out by an affix, if it is neighbored by a [+Acc] head. Ranking PARSE [P]$^{[+Nom]/[+Acc]}$ between COH [3] and PARSE Φ now excludes candidate (15-c) as desired:

(15) Input: [+Nom +3 -pl]$_{Agr}$[+Acc +3 -pl]$_{Agr}$

	COH [3]	PARSE [P]$^{[+Nom]/[+Acc}$	PARSE Φ
a. V **se:**[+Acc +3]$_{Agr}$ **?:** [+3]	*!		**
b. V **?:**[+3]$_{Agr}$			***
☞ c. V **se:**[+Acc +3]$_{Agr}$		*!	***

Since hierarchy effects are often sensitive to the combination of different prominence relations or restricted to specific parts of paradigms I will generalize the schema in (13) to (16):

(16) Generalized Schema for Relativized Parse Constraints:

There is a relativized constraint PARSE [F]$^{[A1....An]/[B1...Bm]}$

iff for all pairs A/B (such that A is in A1....An and B is in B1...Bm)

a.) there is at least one such pair A/B licensed by the prominence hierarchy A > B

b.) there is no pair A/B for which there is the prominence hierarchy B > A

This schema still allows to derive the constraints in (14) which obviously contain at least one pair of features licensed by a prominence hierarchy and none in contradiction to a hierarchy relation. In addition, also the constraints in (17) are licensed. In (17-a), two hierarchies are combined ((12-a) and (12-b)) and in (17-b), the preference of second over 3rd person is restricted to the case that the 3rd person argument is plural:

(17) Relativized Parse Constraints Licensed by (16)

a. PARSE [P]$^{[+Nom+2]/[+Acc+3]}$

b. PARSE [P]$^{[+2]/[+3+pl]}$

On the other hand, the constraints in (18) are not licensed by (16) and hence excluded. (18-a) does not contain any feature pair related by a prominence hierarchy (violating (18-a)), (18-b) contains a feature pair with reversed prominence (+3 over +2), violating (16-b), and (18-c) straightforwardly violates (16-a) *and* (16-b):

(18) Relativized Parse Constraints not Licensed by (16)

a. PARSE [P]$^{[+2]/[+pl]}$

b. PARSE [P]$^{[+Nom+3]/[+Acc+2]}$

c. PARSE [P]$^{[+3]/[+2l]}$

Note that none of the introduced constraint types is specific to Yurok. COHERENCE and hierarchy effects are pervasive in languages with complex agreement morphology (see

Trommer, 2003a,b,f,g).[9] and virtually any constrained-based approach to morphology requires constraints like PARSE Φ. On the other hand, we will see in the following sections that the constraints proposed so far are substantial for the explanation of redundancy avoidance in Yurok.

3.2 Constraint Domains

In lexicalist approaches to morphology, all morphological constraints apply at the word level At the core of my analysis here is the assumption that all spellout constraints can apply in different syntactically defined local domains.[10] More specifically, I assume the three domain types in (19):

(19) 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 (20) (order irrelevant):

(20) 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] 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

9 Indeed Menominee has a number of striking effects due to COH [3] which are discussed briefly in section 7.

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).

Sets Chain Constraints. (21) and (22) 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 Yurok (coindexing is marked here by superscripts):

(21) Head-Level Constraints

Output:	$Agr^1_o\ Agr^2_o\ .\ .\ .\ Agr^3_o$	$CL^1o\ CL^2o\ .\ .\ .\ CL^3_o$
	↑	↑
Input:	$Agr^1_i\ Agr^2_i\ .\ .\ .\ Agr^3_i$	$CL^1_i\ CL^2_i\ .\ .\ .\ CL^3_i$

(22) Chain-Level Constraints

Output:	$Agr^1_o\ Agr^2_o\ .\ .\ .\ Agr^3_o$	$CL^1o\ CL^2o\ .\ .\ .\ CL^3_o$
		↑
Input:	$Agr^1_i\ Agr^2_i\ .\ .\ .\ Agr^3_i$	$CL^1_i\ CL^2_i\ .\ .\ .\ CL^3$

The basic motivation for assuming different spellout domains of this type is the following: On the one hand, spellout seems to be sensitive to the sum of clitics and agreement. Thus in the singular forms in (2) discussed above, the use of agreement affixes is suppressed if the corresponding features are already expressed by clitics. On the other hand, there is genuine redundancy in clitic-agreement complexes. Thus in forms like (23), the feature 1st person ([+1]) is expressed by the 1st person clitic *and* the 1pl agreement suffix **-h** (**-o** is a lexically determined theme vowel glossed here as "TH"):

(23) **ne-**tmo·l-oyog-o**-h** 'you (sg./pl.) they/he shoot(s) us' (pg. 75)
1-shoot-INV-TH-1pl

If the feature [+1] is present underlyingly in a clitic head and an agreement head and there are also spellout constraints at the head level, these will require realization for both instances of [+1]. Thus, in a nutshell, head-level constraints account for redundancy, chain-level constraints for non-redundancy in agreement-clitic complexes. Which one prevails in a given context depends on the ranking of specific constraints.

In the following sections, I will show that crucial parts of Yurok pronominal inflection, and especially the forms involving Clitic-Agreement Doubling can be captured in an elegant and enlightening way by the use of the constraint types introduced so far relativized to different morphosyntactic domains.

4 Clitics

As in Algonquian languages, pronominal clitics in Yurok can refer either to subject (24-a) and object (24-b), and as in Algonquian only one one clitic can appear in a specific clause, in other words, it is impossible to crossreference subject and object by clitics at the same time (24-c):[12]

(24) a. **k'e-**tmo·l-o-p-ah 'you (sg.) shoot me'
2 -V-TH-O1-AGR

b. **ne-**tmo·l-o-p-ah 'you (sg.) shoot me'
2 -V-TH-O1-AGR

c. ***ne-k'e-**tmo·l-o-p-ah (pg. 75)
1-2 -V-TH-O1-AGR

However, unlike in Algonquian, crossreferencing by clitics is restricted to subjects for most person-number combinations of subject and object. Thus for the proposition 'I meet you' there is a form corresponding to (24-a), but none corresponding to (24-b) :

(25) a. **ne-**kceni-ce-k' 'I meet you (sg.)'
1 -V-O2-AGR

b. ***k'e-**kceni-ce-k'
2 -V-O2-AGR

c. ***ne-k'e-**kceni-ce-k' (pg. 71)
1-2 -V-O2-AGR

Crossreferencing the object is restricted to clauses with a 2nd person subject and a 3pl object (26) and to clauses with a 1pl object or a 1sg object and a singular subject (27). While object reference is obligatory for the constellations in (26), for the ones in (27) both, subject or object reference are possible. The notation X:Y stands in the following for a subject of type X and an object of type Y, e.g. 3pl:2sg for a 3pl subject and a 2sg object:

(26) Constellations with *Obligatory* Object Crossreferencing

	Subject Reference
3pl:2sg	k'e-
3pl:2pl	k'e-

12 See Halle & Marantz (1993) , Dechaine (1999) and Trommer (203c) for discussion of the Algonquian facts.

(27) Constellations with *Optional* Object Crossreferencing

	Subject Reference	Object Reference
2sg :1sg	ne-	k'e-
3sg:1sg	ne-	we-
2sg/pl:1pl	ne-	k'e-
3sg/pl:1pl	ne-	we-

.

I will show that these facts follow straightforwardly from the approach to template positions and hierarchy effects proposed in section 3. First, the fact that sequences of two clitics are excluded and crossreferencing usually targets the subject can be derived from the constraint COHERENCE [ ]$_{Cl}$ which punishes multiple occurrence of clitics and the relativized PARSE constraint PARSE PER$^{[Nom]/[Acc]}$ which requires realization of the person feature corresponding to a nominative clitic head in the context of an accusative head. To indicate that both constraints are restricted to a head domain, and more specifically to the clitic complex there is a corresponding designation under each row in the tableau:

(28) 1sg:2sg

	COH [ ]$_{Cl}$	PARSE PER$^{[Nom]/[Acc]}$
☞ a. **ne:**[+1]$_{Cl}$ V		
b. **k'e:**[+2]$_{Cl}$ V		*!
c. **ne:**[+1]$_{Cl}$ **k'e:**[+2]$_{Cl}$ V	*!	
Domain:	**Clitics**	**Clitics**

Now recall from section 3 that the schema for relativized PARSE constraints in (16) allows to derive the constraint PARSE [P]$^{[+2]/[+3+pl]}$ (17-b). Ranking this constraint above COH [ ]$_{Cl}$ we get correctly the object clitic for a 3pl:2sg form:

(29) 3pl:2sg

	COH [ ]$_{Cl}$	PARSE [P]$^{[+2]/[+3+pl]}$	PARSE PER$^{[Nom]/[Acc]}$
a. **we:**[+3]$_{Cl}$ V		*!	
☞ b. **k'e:**[+2]$_{Cl}$ V			*!
c. **we:**[+3]$_{Cl}$ **k'e:**[+2]$_{Cl}$ V	*!		
Domain:	**Clitics**	**Clitics**	**Clitics**

A completely analogous tableau can be provided for 3pl:2pl. For clauses with a 2nd person subject and a 3pl object PARSE [P]$^{[+2]/[+3+pl]}$ has no other effect than reinforcing subject reference which is already predicted by PARSE PER$^{[Nom]/[Acc]}$. For other constellations such as 1sg:2sg, the constraint does not have any effects at all. In a similar way, the schema also licenses the relativized PARSE constraints in (30) which correspond to the single cases in (27):

(30) a. PARSE PER$^{[1\ pl]/[2\ sg]}$

b. PARSE PER$^{[1\ pl]/[3\ sg]}$

c. PARSE PER$^{[1\ pl]/[2\ pl]}$

d. PARSE PER$^{[1\ pl]/[3pl]}$

e. PARSE PER$^{[1\ sg]/[2\ sg]}$

f. PARSE PER$^{[1\ pl]/[3\ sg]}$

Since the relative ranking of these constraints is irrelevant and they are otherwise ranked in the same position, I will refer to the sum of the constraints in (27) by using the abbreviation PARSE PER$^{[1]/[2/3]}$. If the relativized PARSE constraints are now unordered with respect to PER$^{[Nom]/[Acc]}$ we get the effect that clitic coreferencing with both arguments becomes possible for the cases in (27) since both lead to the same number of constraint violations. Consider for example a 2sg:1sg clause:

(31) 2sg:1sg

	COH [ ]$_{Cl}$	PARSE [P]$^{[Nom]/[Acc]}$	PARSE [P]$^{[1\ ]/[2/3]}$
☞ a. **ne:**[+1]$_{Cl}$ V		*	
☞ b. **k'e:**[+2]$_{Cl}$ V			*
c. **ne:**[+1]$_{Cl}$ **k'e:**[+2]$_{Cl}$ V	*!		
Domain:	**Clitics**	**Clitics**	**Clitics**

For the cases where the subject is favored by the constraints in (30), both PARSE PER$^{[1]/[2/3]}$ and PER$^{[Nom]/[Acc]}$ prefer subject clitics:

(32) 1sg:2g

	COH [ ]$_{Cl}$	PARSE [P]$^{[Nom]/[Acc]}$	PARSE [P]$^{[1]/[2/3]}$
☞ a. **ne:**[+1]$_{Cl}$ V			
☞ b. **k'e:**[+2]$_{Cl}$ V		*!	*
c. **ne:**[+1]$_{Cl}$ **k'e:**[+2]$_{Cl}$ V	*!		
Domain:	**Clitics**	**Clitics**	**Clitics**

Finally, for cases with none of the configurations targeted by PARSE PER$^{[1\ ]/[2/3}$ we get straightforwardly subject reference by PER$^{[Nom]/[Acc]}$.

5 Clitic-Agreement Doubling in Intransitive Forms

Since the distribution of clitics seems to be independent from the distribution of agreement (but not vice versa), I will assume that the constraints on clitics introduced in section 4 are ranked above all constraints on the agreement domain and the chain domain comprising both agreement and clitics. To make the tableaus more transparent, I will omit the constraints on clitics in this and the following sections. However, their effects will be mirrored in the fact that for each input only candidates with correct clitics will be considered in the tableau.

Let us start with simple intransitive forms with 3sg subjects. (33) shows the relevant chains, and the features associated with these chains for sentences with and without pronominal clitics. Presence or absence of clitics is here simply interpreted as an effect of different syntactic derivations:

(33) Chains and Features in Intransitive Forms

	Form without Clitics	**Form with Clitics**
a. **Chains**	V $[+Agr\ +3\ -pl]_i$	$[+Cl\ +3\ -pl]_i$ V $[+Agr\ +3\ -pl]_i$
b. **Features of Chain** *i*	[+Agr +3 -pl]	[+Cl +Agr +3 -pl]

Since GEN in DO does not license feature insertion the only markers available to spellout the features of the chains in (33) are the following vocabulary items:

(34) VIs for 3rd person marking

we : $[+3]_{Cl}$

? : $[+3]_{Agr}$

k' : $[\ ]_{Agr}$

The character of **-k'** as a default affix is captured by the fact that it only specifies the categorial feature for agreement. Nonetheless its insertion will be forced by PARSE cat if no other affix is available to realize $[\ ]_{Agr}$.[13]

We have already seen the effects of COH [3] and PARSE Φ with 2sg forms and 3sg transitive forms. The ranking straightforwardly extends to intransitive 3sg forms where COH [3] is satisfied by all relevant candidates. I assume that PARSE Φ and the other general PARSE constraints apply at the Chain Domain and COH [3] at the Head Domain:

13 The singular agreement markers are assumed here not to specify number. One could also assume that they are marked by -pl. which would not substantially change the proposed analysis.

(35) 3sg Intransitive Simple[14]

	COH [3]	PARSE Φ	PARSE cat	PARSE case
☞ a. V **?:**[+3]$_{Agr}$				*
b. V **k':**[ ]$_{Agr}$		*!		*
c. V		*!	*	*
Domain:	**Head**	**Chain**	**Chain**	**Chain**

Now, recall that all constraints apply at any spellout level, possibly with different rankings. If we assume that COH [3] applies also at the chain level, only one appearance of a 3rd person clitic or agreement marker, excluding candidate (36-a). However (36-b) avoids appearance of two instances of [+3] by using **k':**[ ]$_{Agr}$ instead of **?:**[+3]$_{Agr}$.Crucially, (36-b) has the same constraint violations for PARSE Φ as (36-a) since 3 is already spelled out by the clitic. All other candidates also avoid violation of COH [3], but are worse for PARSE Φ:

(36) 3sg Intransitive Clitics

	COH [3]	PARSE Φ	COH [3]	PARSE cat	PARSE case
☞ a. **we:**[+3]$_{Cl}$: V ?:[+3]$_{Agr}$			*!		*
b. **we:**[+3]$_{Cl}$ V **k':**[ ]$_{Agr}$					*
c. **we:**[+3]$_{Cl}$ V				*!	*
Domain:	**Head**	**Chain**	**Chain**	**Chain**	**Chain**

The different ranking of COH [3] in head and chain domain becomes relevant with plural forms. For 3pl agreement, there is the VI **ł:**[+3 +pl]$_{Agr}$ which spells out person and number. The combination **we:**[+3]$_{Cl}$- **ł:**[+3 +pl]$_{Agr}$ hence spells out one more feature than **w:**[3]$_{Cl}$- **k':** [ ]$_{Agr}$ and fares better for PARSE Φ:

(37) 3pl Intransitive Clitics

	COH [3]	PARSE Φ	COH [3]	PARSE cat	PARSE case
☞ a. **we:**[+3]$_{Cl}$: V **ł:**[+3+pl]$_{Agr}$			*		*
b. **we:**[+3]$_{Cl}$: V **?:**[+3]$_{Agr}$		*!	*		*
c. **we:**[+3]$_{Cl}$ V **k':**[ ]$_{Agr}$		*!			*
d. **we:**[+3]$_{Cl}$ V		*!		*	*
Domain:	**Head**	**Chain**	**Chain**	**Chain**	**Chain**

Crucially, COH [3] (Chain) must be ranked below PARSE Φ because under the opposite ranking **ł:**[+3 +pl]$_{Agr}$ would be replaced by **k':**[ ]$_{Agr}$ just as in the singular forms. At the same time, COH [3] (Head) must be ranked above PARSE Φ to ensure blocking of object agreement in 3:3 forms. But different ranking is only possible if spellout constraints can be relativized to different syntactic domains. Further, a local morphological factor namely that

14 "Simple" is used in the following as a shorthand for inputs without Clitics

a more specific VI is available for plural than for singular agreement has the effect that suppression of double 3rd-person marking inside a syntactic chain is suspended showing that constraints at the bigger (chain) level have to interact with morphological detail at the head level. This seems to exclude any lexicalist account which is based purely on the word level.

The analysis so far could be extended in two ways to forms with 2nd person subjects. Either we assume a generalization of COHERENCE [3] to person features in general (PARSE [PER]), or an additional constraint PARSE [2]. Either possibility seems to lead to the same empirical results for Yurok, but I will assume the latter analysis here since Menominee seems to have a restriction on 3rd person affixes (cf. section 7) without evidence to the same effect for 2nd person. For 1st person singular forms only the agreement VI **k':**[ ]$_{Agr}$ is available which does not violate either of these constraints (nor potentially PARSE [PER] or PARSE [1]). Hence, by PARSE Φ the most specific form **ne:** [+1]$_{Cl}$ V **k':**[ ]$_{Agr}$ is chosen. Similarly for the 1pl we get **ne:**[+1]$_{Cl}$ V **h:**[+1 +pl]$_{Agr}$.

(38) 1sg Intransitive Simple

	COH [3]	PARSE Φ	COH [3]	PARSE cat	PARSE case
☞ a. V **k':**[ ]$_{Agr}$		**			*
b. V		**		*!	*
Domain:	**Head**	**Chain**	**Chain**	**Chain**	**Chain**

(39) 1sg Intransitive Clitics

	COH [3]	PARSE Φ	COH [3]	PARSE cat	PARSE case
☞ a. **ne:**[+1]$_{Cl}$: V **k':**[ ]$_{Agr}$		*			*
b. **ne:**[+1]$_{Cl}$: V		*		*!	*
Domain:	**Head**	**Chain**	**Chain**	**Chain**	**Chain**

Taken together, we have seen that the (non-)suppression of redundant person marking in agreement can be captured by constraints against multiple instances of the same feature, and the requirement to spellout all features of a chain.

6 Clitic-Agreement Doubling in Transitive Forms

In transitive verb forms, the constraints introduced in the last section interact in a complex manner with other factors such as inverse marking (section 6.1) and contextually determined allomorphy (sections 6.2 and 6.3). Again, the presence of clitics has a crucial impact on the spellout of agreement morphology, and again the relativization of spellout constraints to different syntactic levels plays a central role in the analysis. Since a complete account of Yurok transitive agreement is beyond the scope of this paper, I will restrict myself here largely to forms with singular subjects since we find only here (just as in intransitive forms) relevant effects of Clitic-Agreement Doubling.

Note first that there are a number of transitive forms which behave in parallel to intransitive forms with regard to CAD. Thus in forms with 3sg objects, singular subject agreement is again fully differentiated in sentences without clitics, but reduced to default **k':**[ ]$_{Agr}$ in sentences with clitics:

(40) Person Neutralization with Transitive Forms (pg. 72)

	without clitics	**with clitics**	
a.	ko?moy-o-se**-k'** hear-TH-O3sg-AGR	**ne-**ko?moy-o-se**-k'** 1-hear-TH-O3sg-AGR	'I hear him'
b.	ko?moy-o-se**-?m** hear-TH-O3sg-2sg	**k'e-**ko?moy-o-se**-k'** 2-hear-TH-O3sg-AGR	'you (sg.) hear him'
c.	ko?mo**?**y hear-3sg	**?u-**ko?moy-o-se**-k'** 3-hear-TH-O3sg-AGR	'he hears him'

(41) and (42) show how the constraints introduced so far derive 2sg:3sg forms with and without clitics. To keep bigger tableaus readable, relativized PARSE constraints on person are abbreviated in the following by the feature structures of their superscripts. Thus [Nom]/[Acc] abbreviates: PARSE [P]$^{[Nom]/[Acc]}$.

(41) 2sg:3sg Clitics

	[Nom]/ [Acc]	COH [2]	PRS Φ	COH [2]	PRS cat
☞ a. **k'e:**[+2]$_{Cl}$ V **se:**[Acc+3-pl]$_{Agr}$ **k':**[ ]$_{Agr}$			*		*
b. **k'e:**[+2]$_{Cl}$ V **se:**[Acc +3-pl]$_{Agr}$			*		**!
c. **k'e:**[+2]$_{Cl}$: V **se:**[Acc+3-pl]$_{Agr}$ **?m:**[+2]$_{Agr}$			*	*!	*
d. **k'e:**[+2]$_{Cl}$: V **?m:**[+2]$_{Agr}$			**!*	*	**
Domain:	**Chain**	**Head**	**Chain**	**Chain**	**Chain**

(42) 2sg:3sg Simple

	[Nom]/ [Acc]	COH [2]	PRS Φ	COH [2]	PRS cat
a. V **se:**[Acc+3-pl]$_{Agr}$ **k':**[ ]$_{Agr}$	*!		**		
b. V **se:**[Acc +3-pl]$_{Agr}$	*!		**		*
☞ c. V **se:**[Acc+3-pl]$_{Agr}$ **?m:**[+2]$_{Agr}$			*	*	
d. V **?m:**[+2]$_{Agr}$			**!*	*	*
Domain:	**Chain**	**Head**	**Chain**	**Chain**	**Chain**

For 3sg:3sg forms we have to take into account additionally the COHERENCE constraint at the head level banning two 3rd person agreement suffixes which was introduced in

section 2. Recall that this leads to suppression of the object marker **se:**[Acc +3-pl]$_{Agr}$ in 3:3 forms without clitics:

(43) 3sg:3sg Simple

	[Nom]/ [Acc]	COH [3]	PRS Φ	COH [3]	PRS cat
a. V **se:**[Acc+3-pl]$_{Agr}$ **k':**[ ]$_{Agr}$	*!		*		*
b. V **se:**[Acc +3-pl]$_{Agr}$	*!		*		**!
☞ c. V **?:**[+3]$_{Agr}$			***		
d. V **se:**[Acc+3-pl]$_{Agr}$ **?:**[+3]$_{Agr}$		*!	*	*	**
Domain:	**Chain**	**Head**	**Chain**	**Chain**	**Chain**

However, since PARSE$^{[Nom]/[Acc]}$ applies at the chain level, it is satisfied by the 3rd-person clitic **we:**[+3]$_{Cl}$ in 3:3 forms with clitics. Since additional appearance of **?:**[+3]$_{Agr}$ (44-c,d) would not fare better for this or any other higher-ranked constraints, PARSE cat gets decisive, and favors default agreement for the subject and full object agreement (44-a):

(44) 3sg:3sg Clitics

	[Nom]/ [Acc]	COH [3]	PRS Φ	COH [3]	PRS cat
☞ a. **we:**[+3]$_{Cl}$ V **se:**[Acc+3-pl]$_{Agr}$ **k':**[ ]$_{Agr}$			*		*
b. **we:**[+3]$_{Cl}$ V **se:**[Acc +3-pl]$_{Agr}$			*		**!
c. **we:**[+3]$_{Cl}$: V **?:**[+3]$_{Agr}$			**!*		
d. **we:**[+3]$_{Cl}$: V **se:**[Acc+3-pl]$_{Agr}$ **?:**[+3]$_{Agr}$		*!	*	*	**
Domain:	**Chain**	**Head**	**Chain**	**Chain**	**Chain**

There is one remaining problem with the ranking in (43). A candidate which is not excluded by this ranking is a form where like in (43-c) **?:**[+3]$_{Agr}$ crossreferences the subject, but **k':**[ ]$_{Agr}$ crossreferences the object. This candidate fares better for PARSE cat since it realizes one more category feature, and has the same violations otherwise. Thus we expect incorrectly that this candidate should become optimal:

(45) 3sg:3sg Simple

	[Nom]/ [Acc]	COH [3]	PRS Φ	COH [3]	PRS cat
c. V **?:**[+3]$_{Agr}$			***		*!
💣 c'. V **k':**[ ]$_{Agr}$ **?:**[+3]$_{Agr}$			***		
Domain:	**Chain**	**Head**	**Chain**	**Chain**	**Chain**

I will assume that (45-c') is excluded by general constraints on the templatic structure of Yurok verb forms. Thus, in Yurok agreement, there are agreement markers specifying case (i.e. grammatical role) and markers unspecified for case. The unspecified markers roughly correspond to the ones used in intransitive forms. For example, **-?m** marks the

subject in (46-a,b), but the object in (46-c). Hence it cannot be marked for a specific case such as nominative or accusative. On the other hand , the 3sg marker **-se** in (46-b) is only used for object marking, and plausibly specified as +Acc(usative).

(46) a. ko?moy-o**-?m** 'you hear' (pg. 34)
hear-TH-2

b. ko?moy-o**-se-?m** 'you hear him' (pg. 72)
hear-TH-O3sg-2

c. tmo·l-oy-e**-?m** 'he hears you (sg.)' (pg. 47)
shoot-INV-TH-2

It is an exceptionless generalization on Yurok agreement that in each verb form there is maximally one agreement suffix unspecified for case (i.e., maximally one marker canonically used for subject agreement) and maximally one case-marked suffix (a canonical object agreement suffix or an inverse marker, cf. section 6.1). I propose to capture these generalizations by two COHERENCE constraints for case-less (-CASE) and case-specified affixes. If these are crucially undominated in Yurok crossreferencing of the object by **k':**[ ]$_{Agr}$ in (45) is correctly excluded

(47) 3sg:3sg Simple

	[Nom]/ [Acc]	COH +CASE	COH -CASE	COH [3]	PRS Φ	COH [3]	PRS cat
☞ c. V **?:**[+3]$_{Agr}$					***		*
c'. V **k':**[ ]$_{Agr}$ **?:**[+3]$_{Agr}$			*!		***		
Domain:	**Chain**	**Head**	**Head**	**Head**	**Chain**	**Chain**	**Chain**

6.1 Inverse Forms

A number of transitive forms are homophonous with intransitive passive forms (pg. 47):

(48) Inverse/Passive Forms

a. tmo·l-oy-e-?m 'you (sg.) are shot ' **or:** 'he shoots you (sg./pl.)' **or:**
shoot-PASS/INV-TH-2 'they shoot you (sg./pl.)'

b. tmo·l-oy-o-h 'we are shot ' **or:** 'he shoots us ' **or:**
shoot-PASS/INV-TH-2 'I/you (sg./pl.)/we/they shoot us'

These forms are of central importance to the analysis of CAD since for clauses with clitics and 3sg:2sg or 3sg:2pl, the apparent passive forms are replaced by transparent forms with subject and object agreement and the familiar suppression of subject person in the

agreement suffix:[15]

(49) 3sg:2sg/2pl forms with Clitics (pg. 75)

a. ?u-ko?moy-o-se-k' 'he hears you (sg.)'
3-hear-TH-O2-AGR

b. ?u-ko?moy-o-c-o? 'he hears you (pl.)'
3-hear-TH-O2p-AGR

I will first sketch a general analysis of the apparent passive forms, and then return to the relation of this pattern and the data in (49).

The forms in (48) appear in configurations which are called "inverse" in the literature on Algonquian languages. In Algonquian, transitive verbs where the object is higher than the object for a prominence hierarchy such as (50) have a specific inverse marker (**-eko** in (51-a)) while forms where the subject is higher have a direct marker (**-a· in** (51-b); examples from Menominee):

(50) Algonquian Animacy Hierarchy

1st/2nd person > 3rd person animate > 3rd person inanimate

(51) Menominee Direct/Inverse Examples

a. ne-na·n**-eko**-w 'he fetches me' (Bloomfield, 1962:154)
1-fetch-INV-[+3]

b. ne-na·n**-a·**-w 'I fetch him' (Bloomfield, 1962:154)
1-fetch-INV-[+3]

While the distribution of apparent passive forms in Yurok transitive forms is more complex (e.g. there are no passive forms for 2:1sg) all these forms appear in contexts which are inverse in Algonquian.[16]

I will assume in the following that the affixes characteristic for pseudo-passives in Yurok are also inverse markers[17] historically developed from and therefore partially homophonous with the passive morpheme. This assumption is based on two facts: First, the syntax of inverse forms does not seem to differ from the syntax of other transitive predications. Second, there are some morphological details where inverse forms differ from "true" passives. Thus for 3sg:2pl clauses, the form in (52-a) (= (48-a)) which is identical to the one for 3sg:2sg (and 2sg passive) is used even though a 2pl passive form is available (52-b):

15 In (49-b), **-k'** is replaced by the allomorph -**o'**. See section 6.2 for an account.

16 In other words, all passive forms in Yurok would be inverse in Algonquian, but not all Algonquian inverse forms are passive in Yurok.

17 Note that many other languages have inverse, but no direct markers while the opposite distribution (direct markers, but no inverse markers) is unattested. See Trommer (2003b) for discussion.

(52) Inverse vs. Passive in 3:2 Forms (pg. 47)

a. tmo·l-oy-e-?m	'you (sg.) are shot ' **or:** 'he shoots you (sg./pl.)' **or:**
shoot-PASS/INV-TH-2	'they shoot you (sg./pl.)'
b. tmo·l-oy-u?	'you (pl.) are shot'
shoot-PASS-2pl	

In the X:1pl forms, the inverse marker (**oy**) can be extended to **oyog** which is not possible for the corresponding passive form ((53-a) = (48-b)).

(53) Inverse vs. Passive in X:1pl Forms (pg. 47)

a. tmo·l-**oy**-o-h	'we are shot ' **or:** 'he shoots us' **or:**
shoot-PASS/INV-TH-1pl	' I/you (sg./pl.)/we/they shoot us'
b. tmo·l-**oyog**-o-h	'he shoots us ' **or:**
shoot-INV-TH-1pl	' I/you (sg./pl.)/we/they shoot us'

In a line with the analysis of inverse markers proposed in Trommer (2003b), I will further assume that inverse markers are portmanteau agreement affixes of the form [Nom . . .]$_{Agr}$ [Acc . . .]$_{Agr}$ expressing essentially case features and therefore licensed by PARSE constraints requiring feature realization, but restricted to a subset of inverse configurations, by specific impoverishment constraints. I will take it for granted in the following that a set of such constraints allows inverse markers only in X:1p and 3:2 forms and that there are two such markers with the entries in (54):

(54) Vocabulary Items for Inverse Markers

a. **oy:** [Nom +3]$_{Agr}$ [Acc]$_{Agr}$

b. **oy(og):**[Nom]$_{Agr}$ [Acc +1]$_{Agr}$

The distribution of inverse markers is crucially governed by the constraints COH +Case and COH -Case introduced above which exclude two case-marked or two case-less agreement affixes (including inverse markers). Thus, two inverse markers (55-a) or an inverse plus a case-marked simple agreement marker (55-b) are excluded by COH +Case, while the cooccurrence of two agreement markers unmarked for case is banned by COH -Case (55-c). Both constraints are unviolated for all Yurok verb forms and will therefore be omitted in the following tableaus. Note that (55) is a pseudo-tableau because (55-a,b,c) are actually excluded by competition with other candidates not with (55-d,e):

(55) COH +/-Case and the Distribution of Inverse Markers

	COH +Case	COH -Case
a. **oy:**[Nom+3]$_{Agr}$ [Acc]$_{Agr}$ **oy(og):**[Nom -1]$_{Agr}$ [Acc+1]$_{Ag}$	*	
b. **oy:**[Nom +3]$_{Agr}$ [Acc]$_{Agr}$ **c:**[+2+Acc] $_{Agr}$	*	
c. **?:**[+3]$_{Agr}$ **a?:**[+2]$_{Agr}$		*
✌d. **oy:**[Nom +3]$_{Agr}$ [Acc]$_{Agr}$ **?m:**[+2]$_{Agr}$		
✌e. **p:**[+1+Acc]$_{Agr}$ **a?:**[+2]$_{Agr}$		
Domain:	**Agr**	**Agr**

Let us now return to the fact that in 3sg:2sg/pl constellations, an inverse form is used in clauses without clitics (48-a) , but a transparent form with default -**k'** in clauses with clitics. (56) shows the situation in a clitic-less clause. Both, (56-a) with caseless object agreement and the inverse marker and (56-b) with caseless subject agreement and a case-marked object affix realize the same person features, and fare equally well for all other constraints. However, (56-a) realizes one more case feature and hence becomes optimal since it incurs no violation for PARSE case:

(56) 3sg:2sg Simple

	Nom/ Acc	COH [3]	PRS Φ	COH [3]	PRS cat	PRS case
☞ a. V **oy:**[Nom +3]$_{Agr}$[Acc]$_{Agr}$ **?m:**[+2]$_{Agr}$			*			
b. V **c:**[Acc +2]$_{Agr}$ **?**:[+3]$_{Agr}$			*			*!
c. V **c:**[Acc +2]$_{Agr}$ **k'**:[ ]$_{Agr}$			**!			*
Domain:	**Chain**	**Head**	**Chain**	**Chain**	**Chain**	**Chain**

In a clause with clitics, COH [3] (Chain) bans presence of the inverse marker (57-a) since the clitic already realizes [+3], but also the simple agreement marker **?**:[+3]$_{Agr}$. (57-b) Similarly as with 3sg:1sg forms we get an object marker and default subject agreement (57-c).

(57) 3sg:2sg Clitics

	Nom/ Acc	COH [3]	PRS Φ	COH [3]	PRS cat	PRS case
a. **we:**[+3]$_{Cl}$ V**oy:**[Nom +3]$_{Agr}$[Acc]$_{Ag\ r}$**?m:**[+2]$_{Agr}$			*	*!		
b. **we:**[+3]$_{Cl}$ V **c:**[Acc +2]$_{Agr}$ **?**:[+3]$_{Agr}$			*	*!		**
☞c. **we:**[+3]$_{Cl}$ V **c:**[Acc +2]$_{Agr}$ **k':**[ ]$_{Agr}$			*			**
Domain:	**Chain**	**Head**	**Chain**	**Chain**	**Chain**	**Chain**

In contrast to 3sg:2 forms, the inverse forms are retained in clauses with clitics for 3pl:2 constellations. Recall also from section 4 that there is a second difference, namely the clitic in these forms crossreferences the object, not the subject:

(58) Inverse Forms in 3pl:2 Constellations (pg. 75)

a. ko?moy-oy-e-?m 'they hear you (sg./pl.)'
hear-INV-TH-2

b. ke-ko?moy-oy-e-?m 'they hear you (sg./pl.)'
2-hear-INV-TH-2

For 3pl:2 constellations without clitics, PARSE case again selects the inverse form:

(59) 3pl:2sg Simple

	Nom/ Acc	COH [3]	PRS Φ	COH [2]	PRS cat	PRS case
☞ a. V **oy:**[Nom 3]$_{Agr}$[Acc]$_{Agr}$**?m:**[2]$_{Agr}$			*			
b. V **c:**[Acc 2]$_{Agr}$ **?**:[3]$_{Agr}$			*			*!
c. V **c:**[Acc 2]$_{Agr}$ **k':**[ ]$_{Agr}$	*!		*			**
Domain:	**Chain**	**Head**	**Chain**	**Chain**	**Chain**	**Chain**

For clauses with clitics the tableau is now essentially the same. Given the preference for the clitic **ne-** and hence object reference by the undominated constraints in the clitic domain, PARSE$^{[Nom]/[Acc]}$ excludes a candidate with **k':**[ ]$_{Agr}$ since this would realize subject person neither by the clitic nor by agreement:

(60) 3pl:2sg Clitics

	Nom/ Acc	COH [3]	PRS Φ	COH [2]	PRS cat	PRS case
☞ a. **ne:**[2]$_{Cl}$ V**oy:**[Nom 3]$_{Agr}$[Acc]$_{Agr}$**?m:**[2]$_{Agr}$			*	*		
b. **ne:**[2]$_{Cl}$ V **c:**[Acc 2]$_{Agr}$ **?**:[3]$_{Agr}$			*	*		*!
c. **ne:**[2]$_{Cl}$ V **c:**[Acc 2]$_{Agr}$ **k':**[ ]$_{Agr}$	*!		*			**
Domain:	**Chain**	**Head**	**Chain**	**Chain**	**Chain**	**Chain**

Forms with 1pl objects are slightly more complex than 3:2 forms. Recall from section 4 that 1pl is more prominent in Yurok than any other combination of person and number. Now the schema (16) in section 3 besides relativized PARSE constraints for person also licenses corresponding constraints for other features such as the ones in (61):

(61) Relativized PARSE Constraints for Case and Plural

a. PARSE case$^{[1\ pl]/[2\ sg]}$

b. PARSE pl$^{[1\ pl]/[2\ sg]}$

(61-a) requires presence of **oy(og):**[Nom]$_{Agr}$ [Acc+1]$_{Agr}$ for a 2sg:1pl form since there is no other VI which realizes the case of a 1pl object. (61-b) requires the presence of **h:** [+1 +pl]$_{Agr}$ since there is no other VI realizing plural for a 1pl object. If both constraints are

ranked high, the form must contain both markers. Since COH +Case and COH -Case are crucially undominated, no other additional affixes are possible (62-e):

(62) 2sg:1pl Simple

	COH +Case	COH -Case	PRS case[1pl]	PRS pl[1]
☞ a. **oy(og):**[Nom]$_{Agr}$ [Acc+1]$_{Agr}$ **h:** [+1 +pl]$_{Agr}$				
b. **oy(og):**[Nom]$_{Agr}$ [Acc+1]$_{Agr}$ **?m:** [+2]$_{Agr}$				*!
c. **h:** [+1 +pl]$_{Agr}$			*!	
d. **?m:** [+2]$_{Agr}$			*!	*
e. **oy(og):**[Nom]$_{Agr}$ [Acc+1]$_{Agr}$ **h:** [+1 +pl]$_{Agr}$ **?m:** [+2]$_{Agr}$		*		
Domain:	**Agr**	**Agr**	**Agr**	**Agr**

Of course, just as in the analysis of clitics for 1pl forms, there is again a family of corresponding constraints ranked in the same way which require **oy(og):**[Nom]$_{Agr}$ [Acc+1]$_{Agr}$ and **h:** [+1 +pl]$_{Agr}$ for all forms with 1pl objects.

6.2 3pl-Object Forms

If person neutralization in Yurok is governed by general constraints, we would expect that these also hold for other affixes which have basically the same content of morphosyntactic features. This seems to be true for Yurok where the default agreement marker **-k'** is replaced by the allomorph **-o?** in transitive forms with plural objects:

(63) AGR Allomorphy with plural objects (pg. 75)

	singular object		**plural object**	
a.	ne-ko?moy-o-se**-'k** 1-hear-TH-O3s-AGR	'I hear him'	ne-ko?moy-o-s?**-o?** 1-hear-TH-O3p-AGR	'I hear them'
b.	ke-ko?moy-o-se**-'k** 2-hear-TH-O3s-AGR	'you (sg.) hear him'	ke-ko?moy-o-s?**-o?** 2-hear-TH-O3p-AGR	'you(sg.) hear them'
c.	?u-ko?moy-o-se**-'k** 3-hear-TH-O3s-AGR	'he hears him'	?u-ko?moy-o-s?**-o?** 3-hear-O3p-AGR	'he hears them'
d.	ne-ko?moy-o-ce**-k'** 1-hear-TH-O2s-AGR	'I hear you (sg.)'	ne-ko?moy-o-c'**-o?** 1-hear-TH-O2p-AGR	'I hear you (pl.)'

Just as **-'k**, **-o?** neutralizes the person contrast in singular forms with clitics. I assume that it is specified by an additional context restriction as in (64) which restricts it to the local context of accusative plural agreement heads:

(64) **-o?:**[ ]$_{Agr}$ // [Acc pl]$_{Agr}$

Context restriction in Distributed Optimality can refer to input structure (marked by "//" as in (64)) or to the output VIs. An example for the latter type is also relevant for forms with 3pl objects. Essentially, the 3pl object marker **-s?** is only used if subject agreement is achieved by **-o?**, but not, if another subject agreement affix appears:

(65) Distribution of 3pl Object -s? and Subject Agreement

	1sg	**2sg**	**3sg**	**1pl**	**2pl**	**3pl**
without clitic	-s?-o?	[+Agr+2]	[+Agr+3]	[+Agr+1+pl]	[+Agr+2+pl]	[+Agr+3+pl]
with clitic	-s?-o?	-s?-o?	-s?-o?	[+Agr+1+pl]	[+Agr+2+pl]	[+Agr+3+pl]

Put another way, the appearance of **-s?** is parasitic on the appearance of **-o?**, [18] which can be captured by the context restriction in its lexical entry in (66):

(66) **s?:**[+Acc +pl]$_{Agr}$ / -o?:[ ]$_{Agr}$

Note that the context restriction here refers to the surface form (indicated by the use of "/"), especially to the VI **o?:**[ ]$_{Agr}$. A context restriction referring to the underlying features of the heads realized by **-o?** is not possible since these do not form a natural class (the distribution of **-o?** is already derived by complex constraint interaction). Two further notes regarding the formal treatment of context restrictions in DO are at place. First, it is assumed that context restrictions are inviolable. In other words, GEN ensures that VIs with context restrictions only appear in contexts where the condition is satisfied. Second, specific constraints favor the use of context restrictions. In derivational frameworks such as DM (Halle & Marantz, 1993) the preference for context-restricted affixes is usually adduced to the Elsewhere Principle since context restrictions make VIs more specific. In a constraint-based approach there must be specific constraints to the same effect. Here I assume that there are two such constraints, I-CONTEXT requiring forms with context specifications referring to the input, and O-CONTEXT requiring output context restrictions. These constraints are violated by forms containing no VI with a respective context restriction and otherwise unviolated. Since **-o?** appears in all environments where its context restriction is met I assume that I-CONTEXT is crucially undominated in Yurok. On the other hand, the preference for realizing **-s?** does not lead to suppression of more specific subject agreement markers in the forms in (63). Hence I take O-CONTEXT to be dominated by all other constraints introduced so far. I will briefly illustrate the effect of I-CONTEXT with the 2sg:3pl form in (67). Note first that a candidate such as (67-c) is simply not in the candidate set indicated here by the symbol "☠" since **s?** does not appear in the appropriate context and context specifications are assumed to be inviolable preconditions on the use of a VI:

18 Note that this statement is not valid in the other direction: **-o?** appears in forms without **-s?**, namely with the 2pl object marker **-c'**, cf. (63-d). Hence the complex **-s?-o?** cannot be analyzed as a portmanteau affix realizing subject and object agreement.

(67) 2sg:3pl Clitics

	Nom/ Acc	COH [3]	PRS Φ	COH [2]	PRS cat	PRS case
☞ a. **k'e:**[2]$_{Cl}$ V **s?:**[Acc 3 pl]$_{Agr}$ **o?:**[ ]$_{Agr}$			*		*	*
b. **k'e:**[2]$_{Cl}$ V **?m:**[2]$_{Agr}$			**!*		**	**
☠ c. **k'e:**[2]$_{Cl}$ V **s?:**[Acc 3 pl]$_{Agr}$ **m?:**[2]$_{Agr}$						
Domain:	**Chain**	**Head**	**Chain**	**Chain**	**Chain**	**Chain**

I-CONTEXT blocks the use of **k'** by assigning one constraint violation to a candidate without an input constraint restriction, and no violation to a candidate containing such a restriction, while the candidates are otherwise identical:

(68) 2sg:3pl Clitics

	Nom/ Acc	I-CONTEXT	COH [3]	. . .
☞ a. **k'e:**[2]$_{Cl}$ V **s?:**[Acc 3 pl]$_{Agr}$ **o?:**[ ]$_{Agr}$ // [Acc pl]$_{Agr}$				
b. **k'e:**[2]$_{Cl}$ V **s?:**[Acc 3 pl]$_{Agr}$ **k':**[ ]$_{Agr}$		*!		
Domain:	**Chain**			**Head**

In the corresponding clause without clitics, 2nd person **?m** is used instead of **o?** (69-a) since there is no other way to satisfy PARSE$^{[+Nom]/[+Acc]}$. As a consequence, **s?** cannot be used either since it is only possible in the context of **o?**. Thus we get a form which is identical to a 2sg intransitive form:

(69) 2sg:3pl Simple

	Nom/ Acc	I-CON	COH [3]	PRS Φ	COH [2]	PRS cat	PRS case
a.V **s?:**[Acc 3 pl]$_{Agr}$ **o?:**[ ]$_{Agr}$	*!			*		*	*
☞ b. V **m?:**[2]$_{Agr}$		*		***		**	**
☠ c. V **s?**:[Acc 3 pl]$_{\mathbf{Agr}}$ **m?:**[2]$_{Agr}$							
Domain:	**Chain**		**Head**	**Chain**	**Chain**	**Chain**	**Chain**

6.3 1sg-Object Forms

Forms with 1sg objects fail to exhibit the replacement of 2sg and 3sg subject markers by default agreement shown by forms with 2sg or 3sg objects (pg. 75):

(70)

	Simple Forms	Forms with Clitics	
3sg:2sg	ko?moy-o**-oy**-e-?m hear-TH-INV-TH-2	?u-ko?moy-o-ce**-k'** 3-hear-TH-O2-Agr	'he hears you (sg.)'
3sg:1sg	tmo·l-o-p**-e?n** shoot-TH-O1-3	we-tmo·l-o-p**-e?n** 3-shoot-TH-O1-3 ne-tmo·lo-p**-ic** 1-shoot-1	'he' shoots me'
2sg:3sg	ko?moy-o-se**-?m** hear-TH-O3-2	k'e-ko?moy-o-se**-k'** 2-hear-TH-O3-AGR	'you (sg.) hear him'
2sg:1sg	tmo·l-o-p**-a?** shoot-TH-O1-2	ke-tmo·l-o-p**-ah** 2-shoot-TH-O1-2 ne-tmo·l-o-p**-ah** 1-shoot-TH-O1-2	'you (sg.) shoot me'

This failure corresponds to another special property of these forms: the affixes for 2sg and 3sg subjects used here do not appear in other verbal paradigms in Yurok. Thus 2sg subjects are expressed by **-?m**, not **-ah** or **-a?** In intransitive and 2:3 forms, and 3sg is expressed by **-?** in intransitive and 3sg:3 forms, not by **-e?n** or **-ic**. In other words, the affixes not replaced by **-k'** in clitic forms only occur in just these contexts. My analysis of these facts is based on the intuition that restricted affixes have more specific lexical entries, and are favored over less specific markers in appropriate contexts. The constraints which effect this preference also ensure that the constraints requiring appearance of **-k'** in clitic forms are overridden. I will illustrate this with the 3sg:1sg forms with **-e?n**. I assume that **-e?n** has the vocabulary entry in (71):

(71) **e?n:**$[+3]_{Agr}$ // $[Acc\ +1\ sg]_{Agr}$

The context restriction $[Acc\ +1\ sg]_{Agr}$ which allows **-e?n** only in the context of an appropriate feature structure refers again to the underlying feature structures not to the actual VIs. Since a 1st person marker occurs with an accusative 1sg head only in 3sg:1sg forms,[19] **-e?n** can only appear in this part of the paradigm. As we have seen in section 6.2, the fact that affixes with context restrictions referring to the input are favored over those without is the effect of the constraint I-CON, ranked above all other relevant constraints. In simple forms this leads to choice of **-e?n** over **-?**, which would otherwise become optimal:

19 The only other case are 3pl:1sg forms. But for these there is another specific marker **-aal**, which replaces **-e?n**.

(72) 3sg:1sg Simple

	I-CON	Nom/ Acc	COH [3]	PRS Φ	COH [3]
☞a. V **p:**[Acc +2]$_{Agr}$ **e?n:**[+3]$_{Agr}$ //[Acc+1+sg]					
b. V **p:**[Acc +2]$_{Agr}$ **?:**[+3]$_{Agr}$	*!				
c. V **p:**[Acc +2]$_{Agr}$ **k':**[ ]$_{Ag}$	*!	*		*	
Domain:		**Chain**	**Head**	**Chain**	**Chain**

Similarly, in a clause with clitics, COH [3] and PARSE are irrelevant since I-CON still favors the marker with a context restriction.

(73) 3sg:1sg Clitics

	I-CON	Nom/ Acc	COH [3]	PRS Φ	COH [3]
☞a. **we:**[+3]$_{Agr}$V **p:**[Acc+2]$_{Agr}$ **e?n:**[+3]$_{Agr}$ //[Acc+1+sg]					*
b. **we:**[+3]$_{Agr}$V **p:**[Acc +2]$_{Agr}$ **?:**[+3]$_{Agr}$	*!				*
c. **we:**[+3]$_{Agr}$V **p:**[Acc +2]$_{Agr}$ **k':**[ ]$_{Agr}$	*!				
Domain:		**Chain**	**Head**	**Chain**	**Chain**

7 Other languages with Constraints on Clitic-Agreement Doubling

Clitic-Agreement Doubling is attested in a number of languages (e.g. dialects of Bavarian and Northern Italian), as are restrictions against the cooccurrence of clitics and agreement (e.g. Selayarese, Yimas, cf. Woolford, 2003). The systems most similar to the one of Yurok can be found in Algonquian languages. Thus, Trommer (2003e) shows that in Menominee (Bloomfield, 1962) CAD is in principle possible. For example, in (74-a) , the feature 1st person is realized by the clitic **ne-**, but also the 1pl suffix -enaw. In (74-b) the feature 2nd person is realized by the clitic, and the inverse marker **-enenɛ** (page numbers refer to Bloomfield, 1962):

(74) Clitic-Agreement Doubling in Menominee

a. **ne-**po·se-m**-enaw** 'we (excl.) embark' (pg. 148)
1-embark-[-3]-**1**pl

b. **ke-**na·tom**-enenɛ**-m-uaw 'I call you (pl.)' (pg. 157)
2-call-[+Nom]:[+Acc+**2**]-[-3]-1pl

As with similar facts in Yurok, these data suggest that spellout constraints apply independently to the two head domains constituted by the clitic complex and the verb-agreement complex. On the other hand, there are also data supporting constraints on the spellout of whole chains. **First**, person features left unexpressed by inverse marking in the so-called independent order, where they are already expressed by pronominal clitic

(75), have to expressed by specific markers in the conjunct order where clitics are generally suppressed (76):[20]

(75) Independent Order Forms

a. ne-na·n-eko-w — 'he fetches me' (pg. 154)
1-fetch-[+Nom]:[+Acc+an]-[+3]

b. ke-na·n-eko-w — 'he fetches you (sg.)' (pg. 154)
2-fetch-[+Nom]:[+Acc+an]-[+3]

(76) Conjunct Order Forms

a. na·tom-enen**ɛ**-k — 'when he calls you (sg.)' (pg. 183)
call-[+Nom]:[+Acc+2]-[+per]

b. n**ɛ**·w-e-t — 'when he sees me' (pg. 181)
see-[+Nom]:[+Acc+1]-[+3]

Second, Menominee has a constraint that only one third person marker is possible in a given verb form. Thus, the suffix **-w** marks the 3rd person subject in (77-a,b) but a 3rd person object in (77-c). However, if both arguments of a transitive verb are 3rd person only one **-w** appears:

(77) Distribution of 3rd Person -w

a. po·se**-w** — 'he embarks' (pg. 148)
embark-[+3]

b. ne-na·n-eko**-w** — 'he fetches me' (pg. 154)
1-fetch-[+Nom]:[+Acc+an]-[+3]

c. ne-na·n-a·**-w** — 'I fetch him ' (pg. 154)
2-fetch-[+Nom+an]:[+Acc]-[+3]

d. na·n-a·**-w** — 'he fetches him' (pg. 154)
fetch-[+Nom+an]:[+Acc]-[+3]

This constraint also extends to the chain level thus there are forms where a 3rd person clitic is obligatory, but in these cases 3rd person suffixes are impossible.

20 "Independent" and "conjunct order"I is the standard terminology f in the linguistic literature on Algonquian. Independent order forms are roughly used in main clauses and conjunct order forms in subordinate clauses. This corresponds to Yurok, where subordination and presence of clitics are also related.

(78) 3rd-Person Clitics

a. **o-**hka·t 'his leg'
3-leg

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

In (78-b) there is a default marker **-n** occupying the position of the 3rd person marker which seems to correspond roughly to the default suffix **-k'** in Yurok. Finally, Menominee also has a marker for non-third person which occurs with 1st and 2nd person arguments,hence specifies [-3]:

(79) Distribution of [-3] *-m*

a. ne-po·se **-m** 'I embark' (pg. 148)
1-embark-[-3]

b. ke-po·se **-m** 'you (sg.) embark' (pg. 148)
2-embark-[-3]

c. ke-na·tom-enenɛ-m-enaw 'we call you (sg./pl.)' (pg. 156)
2-call-[+Nom]:[+Acc+2]-[+3]-1pl

d. ke-nɛ·w-e-m 'you (sg.) see me' (pg. 156)
2-see-[+Nom]:[+Acc+1]-[-3]

As might be expected, **-m** and **-w** cannot cooccur. If one of the arguments is 3rd and the other non-third, only **-w** appears:

(80) Non-Cooccurrence of *-w* and *-m*

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

b. ne-na·n-a·**-w** 'I fetch him ' (pg. 154)
2-fetch-[+Nom+an]:[+Acc]-[+3]

What these data show is that Menominee shares with Yurok the property that Clitic-Agreement Doubling is in principle possible, but is restricted by very specific constraints. Moreover, apart from differences such as the absence of [-3] markers in Yurok, both languages share one substantial constraint, namely the ban on more than one 3rd person marker, implemented in this paper by the constraint COHERENCE [3]. Future research has to show how widespread these phenomena are in Algic and more generally crosslinguistically. However, the Menominee data make it clear that they are not an idiosyncratic property of Yurok.

8 The Analysis of Blevins (2004)

The only other formal treatment of Yurok CAD I am aware of is Blevins (2004). I will show here that her analysis is problematic in several respects.

Blevins assumes that pronominal clitics in Yurok are actually agreement prefixes and that the suppression of agreement markers in the context of clitics expressing the same features is due to the two rules of referral in (81) and (82):

(81) Rule of Referral for Intransitive Verb Forms

> In unipersonal[21] pronominal prefix singular (subject) forms, the base of prefixation has the same form as the unipersonal indicative first person singular (subject).
> (Blevins,2004:15)

(82) Rule of Referral for Transitive Verb Forms

> In bipersonal pronominal prefix singular subject forms, the base of prefixation has the same form as the corresponding bipersonal indicative first person singular subject form .
> (Blevins,2004:16)

Even though (81) and (82) could obviously be collapsed into a single rule, Blevins prefers to avoid this step since she assume that historically Yurok only had the rule in (81) and only in a later stage extended the process to transitive forms by adding the rule for transitive forms to the grammar.

While Blevins' analysis allows a concise statement of the facts it is problematic in a number of ways. **First**, rules of referral (Zwicky, 1985; Stump, 1993) are a highly problematic formal device which allows to relate any word form to any other form of its paradigm. Since rules of these types are linguistically unrestrictive and computationally complex[22], they have been rejected by proponents of lexicalist (Wunderlich, 1995) and syntactic (Bobaljik, 2002) approaches to morphology alike. Blevins argues that "syncretism within the Yurok bipersonal paradigm stands as a serious challenge to any model of morphology which fails to incorporate rules of referral." (Blevins, 2004:16). However, the analysis in the preceding sections shows that a theoretically sound analysis of these data without such rules is possible. **Second**, Blevins' assumption that pronominal clitics in Yurok form morphosyntactic words with the verb and the agreement suffixes (and hence that the clitics are actually prefixes) does not account for the fact that they can be separated from the verb by other syntactic material. Blevins acknowledges this problem, but does not provide any solution for it (pg. 9). **Third**, the rules in (81) and (82) do not allow to connect the involved processes to the fact that they reduce redundancy in the agreement-clitic complex. Blevins admits that the motivation for these processes is the thrive to relate morphological features and exponent morphemes in a one by one fashion, but locates this motivation in the language-acquisition device., not in the grammar itself. Rules of referral are also incapable to relate the avoidance of 3sg suffixes in the context of a 3rd person clitic to other phenomena such as the suppression of 3rd person object

21 Following Robins (1958), Blevins calls intransitive verb forms unipersonal, and transitive verb forms bipersonal.

22 Rules of referral are in a sense similar to the unrestricted transformations of early generative grammar: They allow to express virtually any generalization, but they also allow to express anything else.

marking in 3:3 forms or the 3rd-person restrictions in Menominee. Unlike in the OT-account for these phenomena, completely different and unrelated morphological rules would be necessary.

Note finally that Blevins' article is on the one hand more ambitious than the present paper, and on the other more restricted. While the analysis presented here presents most of the constraint inventory necessary for a complete formal analysis of Yurok verb inflection, Blevins provides hardly more morphological rules than the ones in (81) and (82). At the same time, Blevins discusses historical aspects of Yurok inflection, not covered in this paper, especially the assumption that neutralization of agreement suffixes first emerged in intransitive forms and then spread to the transitive paradigm. However, it remains unclear whether there is any evidence for the historical development she sketches apart from the synchronic data and the assumption that neutralization in the transitive forms is in principle unmotivated, and can therefore only be explained by an extension of the intransitive paradigm. But if the analysis proposed here is on the right track, neutralization in both, transitive and intransitive forms follows from general principles on spellout, and does not imply anything on the historical development.

9 Summary

In this paper, I have provided an optimality-theoretic analysis of Clitic-Agreement Doubling in Yurok. It turns out that intricate aspects of CAD follow from the ranking of general constraints on spellout and the assumption that these constraints can be ranked differently for different syntactically defined spellout domains. This analysis also allows to formulate close structural similarities between the inflectional systems of Yurok and Algonquian languages (especially Menominee) which is not possible in a rule-based account such as Blevins (2004).

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