

Clitic-Agreement Doubling in Yurok

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Abstract

In Clitic-Agreement Doubling, Φ -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, 2006). 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).

1. Introduction

Yurok is an almost extinct Algic language from Northwest California¹ 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 crossferencing of subject features. (1) shows this for the verbs **koʔmoʔy**, ‘to hear’ (pg. 34)² and **neḗ**, ‘to eat’ (Blevins, 2004:3). Note that many instances of agreement affixes are preceded by “thematic vowels” such as **e** and **o** (Blevins, 2004) depending on the inflectional class of the verb and adjacent inflectional affixes. The following analysis will abstract away from the morphophonology of thematic vowels.

1-2-many, 129-171

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

²Page numbers refer to Robins (1958), unless otherwise noted.

- (1)
- Intransitive Forms of *koʔmoʔy*, ‘to hear’ and *nep*, ‘to eat’³**

	Singular	Plural		Singular	Plural
1	koʔmoy-o- ḳ	koʔmoy-o- h	1	nep-e- ḳ	nep-o- h
2	koʔmoy-o-ʔ m	koʔmoy-o-ʔ w	2	nep-e-ʔ m	nep- uʔ
3	koʔmoʔy	koʔmoy-o- ɬ	3	nep̣	nep-e- ɬ

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

- (2)
- Intransitive Forms with Clitics of *tmo-l*, ‘to shoot’ (pg. 51)**

	Singular	Plural
1	(ʔ)ne-tmo-l-o- ḳ	(ʔ)ne-tmo-l-o- h
2	ke-tmo-l-o- ḳ	ke-tmo-l-o-ʔ w
3	(ʔ)we-tmo-l-o- ḳ	(ʔ)we-tmo-l-o- ɬ

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 (3-a) or adverbial phrases (3-b), providing strong evidence for their clitic status.⁵

³In the following all agreement affixes and pronominal clitics are printed in bold-face. Transcription and typography follows closely Robins (1958) where ʔ stands for the glottal stop ([ʔ]), **ḳ** and **ɬ** for ejective stops ([kʰ] and [tʃʰ] respectively), and vowel length is marked by “.”. The 3sg suffix -ʔ appears often as an infix for phonological reasons.

⁴These clitics are also used to mark nominal possession.

⁵A detailed discussion on the clitic status of Yurok clitics is given in Blevins (2001) Blevins shows that a number of processes in the prosodic morphology of Yurok apply to verbal stems including agreement suffixes, but excluding pronominal clitics. Moreover she describes phenomena where idiosyncratic allomorphy of pronominal clitics is triggered by the phonology of the verbal stem, and different morphological dependencies between agreement suffixes and pronominal clitics, including the phenomena analyzed here. On the basis of these data Blevins concludes that the pronominal clitics in Yurok are actually agreement prefixes. In the framework adopted here, allomorphy is not restricted to word-internal contexts (see

(3) **Clitics Non-Adjacent to the Verb (pg. 58)**⁶

- a. niki ^ʔu-ko-si ten
 All 3-everywhere rain (uninflected)
 ‘It was raining everywhere.’ (Robins, 1958:58)
- b. ^ʔiki newo-ḳ ku ḳe-sku^ʔy so ^ʔo-ḳ
 then see-1sg COMP 2-good so live-AGR
 ‘then I saw that you lived a good life,’ (Blevins, 2004:9)

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 **ḳe-**, but also **-^ʔw** 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 with 1sg forms in the forms with clitics (**-ḳ**).

There are in principle two ways to analyze **-ḳ**. *First*, as a 1sg-affix which is extended for some reason to specific 2nd and 3rd person forms. *Second*, **-ḳ** might be viewed as a default agreement marker which appears in forms without clitics by virtue of 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 (Trommer, 2003c), I will choose the latter alternative.

Viewing **-ḳ** as a default agreement marker has a further advantage: Suppression of **-^ʔm** and **-^ʔ** can now be seen as the consequence of a ban against too many markers specifying the same features. Thus **-^ʔm** marks the feature [+2], but **ḳe-** also does. **-^ʔm** additionally signals the syntactic presence of agreement, but this can also be achieved by **-ḳ**

Trommer, 2003b for empirical evidence) and morphological interactions between agreement suffixes and pronominal clitics are crucially predicted by the theory of morphological domains. Given this background, Blevins’ data are fully compatible with a clitic analysis.

⁶Note that the 3rd person clitic **we-** has the allomorph **^ʔu-** in specific phonological contexts. The following abbreviations are used in glosses: 1/2/3 = 1st/2nd/3rd person, ACC = accusative, AGR = agreement affix, C(L) = clitic, COMP = complementizer, INV = inverse marker, PER = person, TH = theme vowel, O(BJ) = object, NEG = negation, NOM = nominative, PASS = passive voice, P(L) = plural, S(G) = singular

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 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 **-ʔen**, default agreement **-k̄** appears, but in (4c) the 3sg marker is retained:

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

- | | | |
|----|---------------------------------------|----------------|
| a. | ne -koʔmoy-o-c-e- k̄ | ‘I hear you’ |
| | 1-hear-TH-O2S-TH-AGR | |
| b. | uʔ -koʔmoy-o-c-e- k̄ | ‘he hears you’ |
| | 3-hear-TH-O2S-TH-AGR | |
| c. | (ʔ) we -tmo-l-o-p-e-ʔ n | ‘he shoots me’ |
| | 3-shoot-TH-O1S-3SG | |

The paper is organized as follows: In section 2, I introduce Distributed Optimality, the formal framework I will assume for the rest of the paper. In section 3, I provide an analysis of pronominal clitics in Yurok. Agreement of intransitive forms is discussed in section 4. This analysis is extended to cover transitive forms in section 5. Section 6 discusses parallels of the Yurok phenomena with a similar system in Menominee. In section 7, I show that the proposed account is superior to an alternative analysis by Blevins (2004). Section 8 gives a short summary of the paper.

2. The Theoretical Framework

The theoretical framework I will assume in the following is Distributed Optimality (DO; Trommer, 2003b, 2003d, 2006), a constraint-based approach to postsyntactic spellout merging concepts from Optimality Theory (OT, Prince and Smolensky, 1993; McCarthy and Prince, 1993,

1994) 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, 2001). 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 **newo--ʔm**, ‘you (sg.) see’ (pg. 34):

(5) **Syntax-Morphology Mapping for *newo--ʔm***

Input:	[+V] ₁	[+Tense -past] ₂	[+Agr +Nom +2 -pl] ₃
Output:	newo-: [+V] ₁		ʔm: [+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, 1993, 1994).⁷ 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 *newo--ʔm***

Input:	[] _V	[-past] _{Tense}	[+Nom +2 -pl] _{Agr}
Output:	newo-: [] _V		ʔm: [+2] _{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

⁷Note that not the VIs themselves are coindexed with lexical items, but the feature structures associated with VIs.

output candidates which contains here all strings which consist exclusively of VIs compatible with input heads. For example, a VI specifying the feature [+3] (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.

2.1. Constraint Types

Which heads are actually realized by VIs and the order of VIs in a given language depend 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 the verb and the tense head:⁸

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

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

PARSE Φ induces one constraint violation for each input Φ -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 general PARSE constraints for case features (PARSE case) and categorial features (PARSE cat):

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

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

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

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

(12) **Input:** [+Nom +3 -pl]_{Ag_r}[+Acc +3 -pl]_{Ag_r}

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

However, (12-a) can also be avoided by incorrectly omitting the subject agreement marker and retaining object agreement, as in (12-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 (13):

(13) **Basic Prominence Hierarchies**

- a. [+Nom] \succ [+Acc]
- b. 1st/2nd Person \succ 3rd Person
- c. Plural \succ Singular

The effects of such hierarchies on agreement are captured in DO by relativized PARSE constraints such as the ones in (15) related to hierarchies in (13) by the general constraint schema in (14):

(14) **Schema for Relativized Parse Constraints:**

If there is a prominence scale $A \succ B$ and a feature F
 there is a relativized PARSE constraint PARSE $[F]^{[A]/[B]}$

(15) **Relativized Parse Constraints Derived from (14) by (15)**

- a. PARSE [PER]^{[+Nom]/[+Acc]}
- b. PARSE [PER]^{[+2]/[+3]}

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

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 adjacent to a [+Acc] head. Ranking PARSE [P]^{[+Nom]/[+Acc]} between COH [3] and PARSE Φ now excludes candidate (16-c) as desired:

(16) **Input:** [+Nom +3 -p]_{Agr}[+Acc +3 -p]_{Agr}

	COH [3]	PRS [P] ^{[+Nom]/[+Acc]}	PRS Φ
a. V s:[+Acc +3] _{Agr} ?:[+3] _{Agr}	*!		**
☞ b. V ?:[+3] _{Agr}			***
☞ c. V s:[+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 (14) to (17):

(17) **Generalized Schema for Relativized Parse Constraints:**

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

iff for all pairs A/B

(such that A is in $A1 \dots An$ and B is in $B1 \dots Bm$)

a.) there is at least one pair A/B

licensed by the hierarchy $A \succ B$

b.) there is no pair A/B for which there is the hierarchy $B \succ$

A

This schema still allows to derive the constraints in (15) 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 (18) are licensed. In (18-a), two hierarchies are combined ((15-a) and (15-b)) and in (18-b), the preference of second over 3rd person is restricted to the case that the 3rd person argument is plural:

(18) **Relativized Parse Constraints Licensed by (17)**

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

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

On the other hand, the constraints in (19) are not licensed by (17) and hence excluded. (19-a) does not contain any feature pair related by a prominence hierarchy (violating (17-a)), (19-b) contains a feature pair with reversed prominence (+3 over +2), violating (17-a), and (19-c) straightforwardly violates (17-a) *and* (17-b):

(19) **Relativized Parse Constraints not Licensed by (17)**

- a. PARSE [P]^{[+2]/[+pl]}
- b. PARSE [P]^{[+Nom+3]/[+Acc+2]}
- c. PARSE [P]^{[+3]/[+2]}

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, 2008).¹⁰ 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.

2.2. 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 spellout constraints may apply in different syntactically defined local domains.¹¹ More specifically, I assume the three domain types in (20):

¹⁰Indeed Menominee has a number of striking effects due to COH [3] which are discussed briefly in section 6.

¹¹This is analogous to OT-approaches to phonology, where phonological constraints apply in different prosodic domains such as the syllable or the phonological word.

(20) **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 are always part of a chain with the schematic form in (21) (order irrelevant):

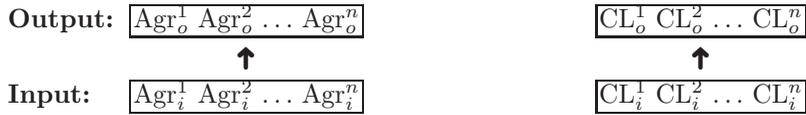
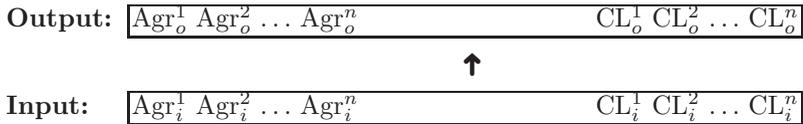
(21) DP_i Clitic _{i} V Agr _{i}

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

A Head Domain¹² 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 Sets *Chain Constraints*. (22) and (23) 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):

¹²Head Domains are called *Spellout Domains* in Trommer (2003b).

(22) **Head-Level Constraints**(23) **Chain-Level Constraints**

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 (24), the feature 1st person ([+1]) is expressed by the 1st person clitic and the 1pl agreement suffix **-h**:

- (24) **(?)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]. 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 different morphosyntactic domains.

3. Clitics

As in Algonquian languages, pronominal clitics in Yurok can refer either to subject (25-a) or object (25-b), and as in Algonquian only 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 (25-c).¹³

- (25) a. **ke**-tmo-l-o-**p-ah** ‘you (sg.) shoot me’ (pg. 75)
 2-shoot-TH-O1-AGR
 b. (**?**)**ne**-tmo-l-o-**p-ah** ‘you (sg.) shoot me’ (pg. 75)
 2-shoot-TH-O1-AGR
 c. ***ne-ke**-tmo-l-o-**p-ah**
 1-2-shoot-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 (25-a), but none corresponding to (25-b):

- (26) a. **ne**-kce¹ni-**c-e-k** ‘I meet you (sg.)’ (pg. 71)
 1-meet-O2-TH-AGR
 b. ***ke**-kce¹ni-**c-e-k**
 2-meet-O2-TH-AGR
 c. ***ne-ke**-kce¹ni-**c-e-k**
 1-2 -meet-O2-TH-AGR

Crossreferencing the object is restricted to clauses with a 2nd person object and a 3pl subject (27), and to clauses with a 1pl object or a 1sg object and a singular subject (28). While object reference is obligatory for the constellations in (27), for the ones in (28) 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:

¹³See Halle and Marantz (1993), Dechaine (1999) and Trommer (2003b) for discussion of the Algonquian facts.

(27) Forms with Obligatory Object Crossreferencing

	Object Reference
3pl:2sg	ke-
3pl:2pl	ke-

(28) Forms with Optional Object Crossreferencing

	Object Reference	Subject Reference
2sg:1sg	ne-	ke-
3sg:1sg	ne-	we-
2sg/pl:1pl	ne-	ke-
3sg/pl:1pl	ne-	we-

I will now show that these facts follow straightforwardly from the approach to template positions and hierarchy effects proposed in section 2. 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 occurrences of clitics and the relativized PARSE constraint PARSE [CL]^{[Nom]/[Acc]} which requires realization of the categorial 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 (the clitic complex) there is a corresponding designation under each column in the tableau:

(29) 1sg:2sg

	COH [] _{Cl}	PARSE [C] ^{[Nom]/[Acc]}
☞ a. ne : [+1] _{Cl} V		
b. ke : [+2] _{Cl} V		*!
c. ne : [+1] _{Cl} ke : [+2] _{Cl} V	*!	

Domain:

Head

Head

Now recall from section 2 that the schema for relativized PARSE constraints in (17) allows to derive the constraint PARSE [C]^{[+2]/[+3+p]} (18-b). Ranking this constraint above PARSE [C]^{[Nom]/[Acc]} we get correctly the object clitic for a 3pl:2sg form (PARSE is abbreviated in the following tableaux as PRS):

(32) **2sg:1sg**

	COH [] _{Cl}	PRS [C] ^{[Nom]/[Acc]}	PRS [C] ^{[1]/[2/3]}
☞ a. ne : [+1] _{Cl} V		*	
☞ b. ke : [+2] _{Cl} V			!*
c. ne : [+1] _{Cl} ke : [+2] _{Cl} V	*!		

Domain:

Head

Head

Head

For the cases where the subject is favored by the constraints in (31), both PARSE [C]^{[1]/[2/3]} and PARSE [C]^{[Nom]/[Acc]} prefer subject clitics:

(33) **1sg:2g**

	COH [] _{Cl}	PRS [C] ^{[Nom]/[Acc]}	PRS [C] ^{[1]/[2/3]}
☞ a. ne : [+1] _{Cl} V			
b. ke : [+2] _{Cl} V		*!	*
c. ne : [+1] _{Cl} ke : [+2] _{Cl} V	*!		

Domain:

Head

Head

Head

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

4. Clitic-Agreement Doubling in Intransitive Forms

Since the distribution of clitics seems to be independent from the distribution of agreement markers (but not vice versa), I will assume that the constraints on clitics introduced in section 3 are ranked above all constraints relevant for agreement and the chain domain comprising both agreement and clitics. To make the tableaux more transparent, I will omit the constraints on clitics in this and the following sections.

Let us start with simple intransitive forms with 3sg subjects. (34) 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:

(34) Chains and Features in Intransitive Forms

	Without Clitics	With Clitics
a. Chains	V [+Agr+3-pl] _i	[+Cl+3-pl] _i V [+Agr+3-pl] _i
b. Chain Features	[+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 (34) are the following vocabulary items:

(35) VIs for 3rd person marking

we: [+3]_{Cl}

ʔ : [+3]_{Agr}

ḳ : []_{Agr}

The character of $\dot{\mathbf{k}}$ 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}.¹⁴ We have already seen the effects of COH [3] and PARSE Φ with 2sg forms and 3sg transitive forms. This 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 (constraints applying in Chain Domains are not specifically marked for their application domain in tableaux):

¹⁴The singular agreement markers are assumed here not to specify number. One could also assume that they are marked for -pl, which would not substantially change the proposed analysis.

(36) **3sg Intransitive Simple**¹⁵

	COH	PRS	PRS	PRS
	[3]	Φ	cat	case
a. V ? : [+3] _{Ag_r}		*		*
b. V k : [] _{Ag_r}		*!*		*
c. V		*!*	*	*

Domain: Head

Now, recall that all constraints apply at any spellout level, possibly with different rankings. If we assume that COH [3] also applies in Chain Sets (indicated by “Chain” in tableaux), only one appearance of a 3rd person clitic or agreement marker is possible, excluding candidate (37-a). However (37-b) avoids appearance of two instances of [+3] by using **k**: []_{Ag_r} instead of **?**: [+3]_{Ag_r}. Crucially, (37-b) has the same constraint violations for PARSE Φ as (37-a) since 3 is already spelled out by the clitic. All other candidates also avoid violation of COH [3], but are worse for PARSE cat.

(37) **3sg Intransitive Clitics**

	COH	PRS	COH	PRS	PRS
	[3]	Φ	[3]	cat	case
a. we : [+3] _{Cl} V ? : [+3] _{Ag_r}		*	*!		*
b. we : [+3] _{Cl} V k : [] _{Ag_r}		*			*
c. we : [+3] _{Cl} V		*		*!	*
d. V ? : [+3] _{Ag_r}		*		*!	*

Domain: Head Chain

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

¹⁵“Simple” is used in the following as a shorthand for inputs without Clitics

fares better for PARSE Φ . The additional constraint PARSE [cat]^{[Cl]/[Agr]} ensures that the clitic is not omitted in favor of agreement (38-e).¹⁶

(38) **3pl Intransitive Clitics**

	PRS [cat] [Cl]/[Agr]	COH [3]	PRS Φ	COH [3]	PRS cat
a. we : [+3] _{Cl} V ɪ : [+3+pl] _{Agr}				*	
b. we : [+3] _{Cl} V ʔ : [+3] _{Agr}			*!	*	
c. we : [+3] _{Cl} V k : [] _{Agr}			*!		
d. we : [+3] _{Cl} V			*!		*
e. V ɪ : [+3+pl] _{Agr}	*!				*

Domain: Chain Head Chain

Crucially, COH [3] (Chain) must be ranked below PARSE Φ because under the opposite ranking **ɪ**: [+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 the fact that 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 (COHERENCE [PER]), or an additional constraint COHERENCE [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 6) without evidence to the same effect for 2nd person.

For 1st person singular forms only the agreement VI **k**: []_{Agr} is avail-

¹⁶PARSE [cat]^{[Cl]/[Agr]} must be ranked below COHERENCE [Cl] since it would otherwise enforce appearance of two clitics in transitive clauses. Since it is never violated in favor of agreement-specific constraints, I will omit it from the following tableaux and only consider candidates with realized clitics.

able which does not violate either of these constraints (nor possible COHERENCE [1]). Hence, by PARSE Φ the most specific form $\mathbf{ne}:[+1]_{\text{Cl}}$ V $\mathbf{k}:[]_{\text{Agr}}$ is chosen. Similarly for the 1pl we get $\mathbf{ne}:[+1]_{\text{Cl}}$ V $\mathbf{h}:[+1 +\text{pl}]_{\text{Agr}}$.

(39) **1sg Intransitive Simple**

	COH [3]	PRS Φ	COH [3]	PRS cat	PRS case
a. V $\mathbf{k}:[]_{\text{Agr}}$		**			*
b. V		**		*!	*

Domain: Head Chain

(40) **1sg Intransitive Clitics**

	COH [3]	PRS Φ	COH [3]	PRS cat	PRS case
a. $\mathbf{ne}:[+1]_{\text{Cl}}$ V $\mathbf{k}:[]_{\text{Agr}}$		*			*
b. $\mathbf{ne}:[+1]_{\text{Cl}}$ V		*		*!	*

Domain: Head 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 spell out all features of a chain.

5. 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 5.1) and contextually determined allomorphy (sections 5.2 and 5.3). Again, the presence of clitics has a crucial impact on the spell-out 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 $\dot{\mathbf{k}}:[]_{Agr}$ in sentences with clitics:

(41) **Person Neutralization with Transitive Forms (pg. 72/75)**

	without clitics	with clitics	
a.	$\dot{\mathbf{k}}\text{-ko}^{\text{'}}\text{moy-o-s-e-}\dot{\mathbf{k}}$ hear-TH-O3S-TH-AGR	$\text{ne-}\dot{\mathbf{k}}\text{-ko}^{\text{'}}\text{moy-o-s-e-}\dot{\mathbf{k}}$ 1-hear-TH-O3S-TH-AGR	'I hear him/her'
b.	$\dot{\mathbf{k}}\text{-ko}^{\text{'}}\text{moy-o-s-e-}\dot{\mathbf{m}}$ hear-TH-O3S-TH-2SG	$\dot{\mathbf{k}}\text{-ko}^{\text{'}}\text{moy-o-s-e-}\dot{\mathbf{k}}$ 2-hear-TH-O3S-TH-AGR	'you (sg.) hear him/her'
c.	$\dot{\mathbf{m}}\text{-ko}^{\text{'}}\text{mo}^{\text{'}}\text{y}$ hear-3SG	$\text{?u-}\dot{\mathbf{k}}\text{-ko}^{\text{'}}\text{moy-o-s-e-}\dot{\mathbf{k}}$ 3-hear-TH-O3S-TH-AGR	'(s)he hears him/her'

(42) and (43) show how the constraints introduced so far derive 2sg:3sg forms with and without clitics. To keep bigger tableaux readable I will apply the following conventions for the rest of the paper: Category subscripts of VIs are omitted since every preverbal VI is a clitic and very postverbal VI an agreement marker. Plus signs in VIs are omitted, for example "[2]" abbreviates [+2]. Relativized PARSE constraints on person are abbreviated by the feature structures of their superscripts. Thus [Nom]/[Acc] abbreviates PARSE [P]^{[Nom]/[Acc]}.

(42) **2sg:3sg Clitics**

		[Nom]/ [Acc]	COH [2]	PRS Φ	COH [2]	PRS cat
☞ a.	$\dot{\mathbf{k}}\text{e}:[2]$ V s:[Acc 3 -pl] $\dot{\mathbf{k}}:[]$			*		*
b.	$\dot{\mathbf{k}}\text{e}:[2]$ V s:[Acc 3 -pl]			*		**!
c.	$\dot{\mathbf{k}}\text{e}:[2]$ V s:[Acc 3 -pl] $\text{?m}:[2]$			*	*!	*
d.	$\dot{\mathbf{k}}\text{e}:[2]$ V $\text{?m}:[2]$			**!*	*	**

Domain:

Head

Chain

(43) 2sg:3sg Simple

	[Nom]/ [Acc]	COH [2]	PRS Φ	COH [2]	PRS cat
a. V s:[Acc 3 -pl] k:[]	*!		**		
b. V s:[Acc 3 -pl]	*!		**		*
c. V s:[Acc 3 -pl] ?m:[2]			*		
d. V ?m:[2]			**!*		*

Domain:

Head

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 s:[Acc +3-pl]_{Agr} in 3:3 forms without clitics:

(44) 3sg:3sg Simple

	[Nom]/ [Acc]	COH [3]	PRS Φ	COH [3]	PRS cat
a. V s:[Acc 3-pl] k:[]	*!		**		
b. V s:[Acc 3-pl]	*!		**		*
c. V ?:[3]			***		*
d. V s:[Acc 3 -pl] ?:[3]		*!	*		

Domain:

Head

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} (45-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 (45-a):

(45) 3sg:3sg Clitics

	[Nom]/ [Acc]	COH [3]	PRS Φ	COH [3]	PRS cat
☞ a. we:[3] V s:[Acc 3 -pl] k:[]			*		*
b. we:[3] V s:[Acc 3 -pl]			*		**!
c. we:[3] V ?:[3]			**!*	*	**
d. we:[3] V s:[Acc 3 -pl] ?:[3]		*!	*	*	*

Domain: Head Chain

There is one remaining problem with the ranking in (44) and (45). A candidate which is not excluded by this ranking is a form where like in (44-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:

(46) 3sg:3sg Simple

	[Nom]/ [Acc]	COH [3]	PRS Φ	COH [3]	PRS cat
☞ c. V ?:[3]			***		*!
☞ c'. V k:[] ?:[3]			***		

Domain: Head Chain

I will assume that (46-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 (47-a,b), but the object in (47-c). Hence it cannot be marked for a specific case such as nominative or accusative. On the other hand, the 3sg marker -s in (46-b) is only used for object marking, and plausibly specified as +Acc(usative).

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:¹⁸

(50) **3sg:2sg/2pl forms with Clitics (pg. 75)**

- a. **ʔu-koʔmoy-o-s-e-k̄** ‘(s)he hears you (sg.)’
 3-hear-TH-O2-TH-AGR
- b. **ʔu-koʔmoy-o-č-oʔ** ‘(s)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 (50). The forms in (49) 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 (51) have a specific inverse marker (**-eko** in (52-a)) while forms where the subject is higher have a direct marker (**-a** in (52-b); examples from Menominee):

(51) **Algonquian Animacy Hierarchy:**

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

(52) **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, 1962:152)
 1-fetch-INV-[+3]

¹⁸In (50-b), **-k̄** is replaced by the allomorph **-oʔ**. See section 5.2 for an account.

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.¹⁹

I will assume in the following that the affixes characteristic for pseudo-passives in Yurok are also inverse markers²⁰ 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 (53-a) (= (49)-a) which is identical to the one for 3sg:2sg (and 2sg passive) is used even though a 2pl passive form is available (53-b):

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

- a. tmo·l-oy-e-ʔm ‘you (sg.) are shot/he shoots you (sg./pl.)/
shoot-PASS/INV-TH-2 they shoot you (sg./pl.)’
- b. tmo·l-oy-uʔ ‘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 ((54-a) = (49)-a).

¹⁹In other words, all passive forms in Yurok would be inverse in Algonquian, but not all Algonquian inverse forms are passive in Yurok.

²⁰Note that many other languages have inverse, but no direct markers while the opposite distribution (direct markers, but no inverse markers) is unattested. See Trommer (2003a) for discussion.

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

- a. tmo-l-oy-o-h ‘we are shot/he shoots us/
shoot-PASS/INV-TH-1PL I/you (sg./pl.)/we/they shoot us’
- b. tmo-l-oyog-o-h ‘he shoots us/
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 ...]_{Ag} [Acc ...]_{Ag} 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 (55):

(55) **Vocabulary Items for Inverse Markers**

- a. oy : [Nom +3]_{Ag} [Acc]_{Ag}
- b. oy(og) : [Nom]_{Ag} [Acc +1]_{Ag}

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 (56-a) or an inverse plus a case-marked simple agreement marker (56-b) are excluded by COH_[+Case], while the cooccurrence of two agreement markers unmarked for case is banned by COH_[-Case] (56-c). Both constraints are unviolated for all Yurok verb forms and will therefore be omitted in the following tableaux. Note that (56) is a pseudo-tableau because (56-a,b,c) are actually excluded by competition with other candidates not with (56-d,e):

(56) **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] _{AGR}	*	
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:

Head Head

Let us now return to the fact that in 3sg:2sg/pl constellations, an inverse form is used in clauses without clitics (49)-a, but a transparent form with default **-k** in clauses with clitics. (57) shows the situation in a clitic-less clause. Both, (57-a) with caseless object agreement and the inverse marker and (57-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, (57-a) realizes one more case feature and hence becomes optimal since it incurs no violation for PARSE case (in the following, I omit PARSE [3] (Head) for forms without two 3rd-person candidates since it is never violated in these forms):

(57) **3sg:2sg Simple**

	[Nom]/ [Acc]	PRS Φ	COH [3]	PRS cat	PRS cas
a. V oy : [Nom 3] [Acc] ?m : [2]		**			
b. V c : [Acc 2] ? : [3]		**			*!
c. V c : [Acc 2] k : []	*!	***			*

Domain:

Chain

In a clause with clitics, COH [3] (Chain) bans presence of the inverse marker (58-a) since the clitic already realizes [+3], but also the simple agreement marker **?**: [+3]_{AGR}. (58-b) Similarly as with 3sg:1sg forms we get an object marker and default subject agreement (58-c).

(58) 3sg:2sg Clitics

	[Nom]/ [Acc]	PRS Φ	COH [3]	PRS cat	PRS cas
a. we : [3] V oy : [Nom 3] [Acc] ʔm : [2]		**	*!	*	
b. we : [3] V c : [Acc 2] ʔ : [3]		**	*!	*	*
☞ c. we : [3] V c : [Acc 2] k : []		**		*	*

Domain:

Chain

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

(59) Inverse Forms in 3pl:2 Constellations

- a. tmo·l-**oy**-e-**ʔm** ‘they shoot you (sg./pl.)’ (pg. 47/70)
hear-INV-TH-2
- b. **ke**-ko^ʔmoy-**oy**-e-**ʔm** ‘they hear you (sg./pl.)’ (pg. 75)
2-hear-INV-TH-2

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

(60) 3pl:2sg Simple

	[Nom]/ [Acc]	PRS Φ	COH [3]	PRS cat	PRS case
☞ a. V oy : [Nom 3] [Acc] ʔm : [2]		**			
b. V c : [Acc 2] ʔ : [3]		**			*!
c. V c : [Acc 2] k : []	*!	***			*

Domain:

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 un-dominated constraints in the clitic domain, PARSE [P]^{[Nom]/[Acc]} excludes a candidate with **k**: []_{AgT} since this would realize subject person neither by the clitic nor by agreement:

(61) **3pl:2sg Clitics**

	[Nom] [Acc]	PRS Φ	COH [2]	PRS cat	PRS case
☞ a. ke : _[2] V oy : _[Nom 3] _[Acc] ʔm : _[2]		**	*	*	
b. ke : _[2] V c : _[Acc 2] ʔ : _[3]		**	*	*	*!
c. ke : _[2] V c : _[Acc 2] k : _[]	*!	***	*	*	*

Domain:

Chain

Forms with 1pl objects are slightly more complex than 3:2 forms. Recall from section 3 that 1pl is more prominent in Yurok than any other combination of person and number. Now the schema (17) in section 2 besides relativized PARSE constraints for person also licenses corresponding constraints for other features such as the ones in (62):

(62) Relativized PARSE Constraints for Case and Plural

- a. PARSE case^{[1 pl]/[2 sg]}
- b. PARSE pl^{[1 pl]/[2 sg]}

(62-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. (62-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 (63-e):

(63) **2sg:1pl Simple**

	Coh [+Case]	COH [-Case]	PRS case ^[1pl]	PRS PL ^[1]
☞ a. oy(og) : _[Nom] _[Acc 1] h : _[1 pl]				
b. oy(og) : _[Nom] _[Acc 1] ʔm : _[2]				*!
c. h : _[1 pl]			*!	
d. ʔm : _[2]			*!	*
e. oy(og) : _[Nom] _[Acc 1] h : _[1 pl] ʔm : _[2]	*			

Domain:

Head Head Head Head

Just as in the analysis of clitics for 1pl forms, there is a family of constraints parallel to (62) which require **oy(og)**:_{[Nom]_{AGR}} [_{Acc+1}] Agr and **h**:_{[+1 +pl]_{AGR}} for all forms with 1pl objects.

5.2. 3pl-Object Forms

If person neutralization in Yurok is governed by general constraints, we 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 **-ḳ** is replaced by the allomorph **-oʔ** in transitive forms with plural objects:

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

	singular object	plural object	
a.	(?) ne -koʔmoy-o-s-e- ḳ 1-hear-TH-O3S-TH-AGR	(?) ne -koʔmoy-o-sʔ- oʔ 1-hear-TH-O3P-AGR	'I hear him/them'
b.	ke -koʔmoy-o-s-e- ḳ 2-hear-TH-O3S-TH-AGR	ke -koʔmoy-o-sʔ- oʔ 2-hear-TH-O3P-AGR	'you(sg.) hear him/them'
c.	ʔu -koʔmoy-o-s-e- ḳ 3-hear-TH-O3S-AGR	ʔu -koʔmoy-o-sʔ- oʔ 3-hear-TH-O3P-AGR	'he hears him/them'
d.	(?) ne -koʔmoy-o-c-e- ḳ 1-hear-TH-O2S-TH-AGR	(?) ne -koʔmoy-o- č - oʔ 1-hear-TH-O2P-TH-AGR	'I hear you (sg./pl.)'

Just as **-ḳ**, **-oʔ** neutralizes the person contrast in singular forms with clitics. I assume that it is specified by an additional context restriction as in (65) which restricts it to the local context of accusative plural agreement heads:

(65) **oʔ**:_{[]_{AGR}} // [_{Acc pl}]_{AGR}

Context restriction in Distributed Optimality can refer to input structure (marked by " //" as in (65)) or to output VIs. An example for the latter type is also relevant for forms with 3pl objects. Essentially, the 3pl object marker **-sʔ** is only used if subject agreement is achieved by **-oʔ**, but not, if another subject agreement affix appears:

(66) Distribution of 3pl Object $-s^?$ and Subject Agreement

	1sg	2sg	3sg	1pl	2pl	3pl
no clitic	$-s^?-o^?$	$[+2]_{Agr}$	$[+3]_{Agr}$	$[+1+pl]_{Agr}$	$[+2+pl]_{Agr}$	$[+3+pl]_{Agr}$
clitic	$-s^?-o^?$	$-s^?-o^?$	$-s^?-o^?$	$[+1+pl]_{Agr}$	$[+2+pl]_{Agr}$	$[+3+pl]_{Agr}$

Put another way, the appearance of $-s^?$ is parasitic on the appearance of $-o^?$,²¹ which can be captured by the context restriction in its lexical entry formulated in (67):

$$(67) \quad s^?:[+Acc +pl]_{Agr} / o^?:[]_{Agr}$$

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 contextually restricted VIs. 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 spe-

²¹Note that this statement is not valid in the other direction: $-o^?$ appears in forms without $-s^?$, namely with the 2pl object marker $-c^?$, cf. (64-d). Hence the complex $-s^?-o^?$ cannot be analyzed as a portmanteau affix realizing subject and object agreement.

cific subject agreement markers in the forms in (68). 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 (68). Note first that a candidate such as (68-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:

(68) 2sg:3pl Clitics

	[Nom]/ [Acc]	PRS Φ	COH [2]	PRS cat	PRS case
☞ a. ke:[2] V s [?] :[Acc 3 pl] o [?] :[]		*		*	*
b. ke:[2] V [?] m:[2]		**!*	*	**	**
‡ c. ke:[2] V s [?] :[Acc 3 pl] [?] m:[2]		‡			

Domain:

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:

(69) 2sg:3pl Clitics

	[Nom]/ [Acc]	I CON	COH [3]	...
☞ a. ke:[2] V s [?] :[Acc 3 pl] o [?] :[]/[Acc pl]				
b. ke:[2] V s [?] :[Acc 3 pl] k:[]		*!		

Domain:

Chain

In the corresponding clause without clitics, 2nd person -[?]m is used instead of -o[?] (70-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:

(70) 2sg:3pl Simple

	[Nom]/ [Acc]	I CON	PRS Φ	COH [3]	PRS cat	PRS case
☞ a. V s [?] : [Acc 3 pl] o [?] : []	*!		**			*
b. V [?] m: [2]		*	***		*	**
† c. V s [?] : [Acc 3 pl] [?] m: [2]						

Domain:

Chain

5.3. 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. 47/72/75):

(71) 1sg/2sg/3sg-Object Forms

	Simple Forms	Forms with Clitics	
3sg:	tmo·l-oy-e- [?] m	[?] u-ko [?] moy-o-c-e-k	‘(s)he shoots/hears
2sg	shoot-INV-TH-2	3-hear-TH-O2-TH-AGR	‘you (sg.)’
3sg:	ko [?] moy-o-p-e [?] n	([?])we-tmo·l-o-p-e [?] n	‘(s)he’ hears me’
1sg	hear-TH-O1-3	3-shoot-TH-O1-3	‘(s)he’ shoots me’
		([?])ne-tmo·l-o-p-ic	
		1-shoot-TH-1-S3	
2sg:	ko [?] moy-o-s-e- [?] m	ke-ko [?] moy-o-s-e-k	‘you (sg.) hear
3sg	hear-TH-O3-TH-2	2-hear-TH-O3-TH-AGR	him/her’
2sg:	ko [?] moy-o-p-a [?]	ke-tmo·l-o-p-ah	‘you (sg.) hear me’
1sg	hear-TH-O1-2	2-shoot-TH-O1-2	‘you (sg.) shoot me’
		([?])ne-tmo·l-o-p-ah	
		1-shoot-TH-O1-2	

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 pref-

erence also ensure that the constraints requiring appearance of $\dot{\mathbf{k}}$ in clitic forms are overridden. I will illustrate this with the 3sg:1sg forms with $\mathbf{-e^?n}$. I assume that $\mathbf{-e^?n}$ has the vocabulary entry in (72):

(72) $\mathbf{e^?n}:[+3]_{Agr} // [\text{Acc } +1 \text{ -pl}]_{Agr}$

The context restriction $[\text{Acc } +1 \text{ sg}]_{Agr}$ which allows $\mathbf{-e^?n}$ 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,²² $\mathbf{-e^?n}$ can only appear in this part of the paradigm. As we have seen in section 5.2, 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 $\mathbf{-e^?n}$ over $\mathbf{-?}$, which would otherwise become optimal:

(73) **3sg:1sg Simple**

	[[Nom]]/ [Acc]	I CON	PRS Φ	COH [3]
☞ a. V p:[Acc 1] $\mathbf{e^?n}:[3] // [\text{Acc } 1 \text{ -pl}]$			**	
b. V p:[Acc 1] $\mathbf{?}:[3]$		*!	**	
c. V p:[Acc 1] $\mathbf{k}:[]$	*!	*	***	

Domain:

Chain

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

(74) **3sg:1sg Clitics**

	[[Nom]]/ [Acc]	I CON	PRS Φ	COH [3]
☞ a. $\mathbf{we}:[3]$ V p:[Acc 1] $\mathbf{e^?n}:[3] // [\text{Acc } 1 \text{ -pl}]$			**	*
b. $\mathbf{we}:[3]$ V p:[Acc 1] $\mathbf{?}:[3]$		*!	**	*
c. $\mathbf{we}:[3]$ V p:[Acc 1] $\mathbf{k}:[]$		*!	**	

Domain:

Chain

²²The only other case are 3pl:1sg forms. But for these there is another specific marker $\mathbf{-a\cdot l}$, which replaces $\mathbf{-e^?n}$.

(76) 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]

(77) Conjunct Order Forms

- a. **na·tom-enenε-k** 'when he calls you (sg.)' (pg. 183)
 call-[+Nom]:[+Acc+2]-[+per]
- b. **ne·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 (78-a,b) but a 3rd person object in (78-c). However, if both arguments of a transitive verb are 3rd person only one **-w** appears:

(78) 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. 152)
 2-fetch-[+Nom+an]:[+Acc]-[+3]
- d. **na·n-ε--w** 'he fetches him' (pg. 152)
 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 (clitics and agreement affixes are also used to express nominal possession as in (79-a)).

(79) **3rd-Person Clitics**

- a. **o-hka-t** 'his leg' (pg. 100)
 3-leg
 b. **o-po-se-n-an** 'he doesn't embark' (pg. 168)
 3-embark-PER-NEG

In (79-b) there is a default marker **-n** occupying the position of the 3rd person marker which seems to correspond roughly to the default suffix **-k̄** in Yurok. Finally, Menominee also has a marker for non-third person which occurs with 1st and 2nd person arguments, hence specifies [-3]:

(80) **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-enenε-m-enaw** 'we call you (sg./pl.)' (pg. 157)
 2-call-[+Nom]:[+Acc+2]-[+3]-1pl
 d. **ke-ne·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:

(81) **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. 152)
 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.

7. 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 (82) and (83):

- (82) **Rule of Referral for Intransitive Verb Forms:**
 In unipersonal²⁴ pronominal prefix singular (subject) forms, the base of prefixation has the same form as the unipersonal indicative first person singular (subject). (Blevins, 2004:15)
- (83) **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 (82) and (83) 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 (83) 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 this type are linguistically unrestrictive and computationally com-

²⁴Following Robins (1958), Blevins calls intransitive verb forms unipersonal, and transitive verb forms bipersonal.

plex,²⁵ 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 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

²⁵Rules of referral are in a sense similar to the unrestricted transformations of early generative grammar: They allow to express virtually any interesting generalization, but they also allow to express anything else.

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.

8. 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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