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Core argument patterns and deep genetic relations

Hierarchical systems in Northern California

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It has been proposed that patterns of core argument marking have high genetic stability and strong resistance to areal influence, making them good indicators of deep genetic relationships (Nichols 1992). Patterns in four languages of Northern California indicate that this is not necessarily the case. Chimariko, Yana, Yurok, and Karuk all show hierarchical systems, cited as the rarest pattern cross-linguistically (3%). The languages are geographical neighbors but not genetically related. The systems share no substance and vary considerably in detail. Chimariko shows a basic agent/patient organization, Yana and Yurok nominative/accusative, and Karuk a mixture. The hierarchies differ. The extent to which the system has penetrated their grammars varies. The constructions exploited to maintain the hierarchies differ. The development of the systems was apparently stimulated by contact, as bilinguals carried discourse behaviors from language to language, stylistic propensities which ultimately crystallized into grammar.

1. Introduction

It has been proposed that patterns of core argument marking are very stable over time, potentially capable of revealing genetic relations more ancient than those detectable through the traditional comparative method. Based on a survey of a large language sample, Nichols has concluded that such patterns have both high genetic stability and strong resistance to areal spread (Nichols 1992: 181, 3). Here this proposal is pursued in a comparison of argument marking in four languages of Northern California. The languages show striking parallelism in a type of pattern that is quite unusual cross-linguistically. The parallelism is not easily explained by chance, because the pattern is so rare. It cannot be explained as a common inheritance, because the languages are not all genetically related. The most likely explanation is language contact, because the languages are spoken in the same

geographical region, but it is difficult to see how such fundamental but abstract systems could be transferred. A closer look at the patterns in each language indicates that none of these explanations is sufficient on its own. The parallelism can be seen to have developed from latent tendencies present in all languages, to have been stimulated by language contact, then to have been shaped by common language-internal processes of grammatical change.

Nichols investigated a set of typological features in a genetically and areally diverse sample of 174 languages. Among the features was the morphological marking of core arguments. Adopting a term from Relational Grammar, she distinguishes six 'alignment' types of core argument marking (1992: 65–66, 181):

a. Neutral b. Accusative c. Ergative
c. Three-way d. Stative-active e. Hierarchical

Her neutral systems are those with no inflectional case or pronominal oppositions. The accusative systems are those that distinguish subject and object categories. The ergative systems distinguish ergative and absolutive categories. The three-way systems distinguish transitive agents, transitive patients, and the single arguments of intransitives. Her stative/active category includes both those systems based on aspect or Aktionsart (active/stative proper) and those based on the semantic roles of participants (agent/patient). She defines her last type, hierarchical systems, as languages in which 'access to inflectional slots for subject and/or object is based on person, number, and/or animacy rather than (or no less than) on syntactic relations' (Nichols 1992: 66). This type was the rarest in her sample, appearing in only 3% of the pertinent languages surveyed (1992: 90). It is this type that is under investigation here. Of four major typological features she surveyed, alignment, morphological complexity, head/dependent marking, and word order, Nichols concluded that alignment was the most stable over time and the least susceptible to influence from contact (1992: 166–167).

The proposal certainly seems reasonable. Morphology is one of the most tightly-integrated, unconscious domains of grammatical structure, generally considered the most resistant to transfer. Nearly a century ago Meillet commented on the resistance of morphology to borrowing.

> La prononciation et la grammaire forment des systèmes fermés; toutes les parties de chacun de ces systèmes sont liées les unes aux autres. Le système phonétique et le système morphologique se prêtent donc peu à recevoir "des emprunts". En fait il est rare qu'on emprunte à une autre langue soit un phonème (un son du langage), soit une forme grammaticale; quand pareil fait se produit, il ne modifie pas l'ensemble de chacun des systèmes et demeure un accident.
>
> (Meillet [1914] 1958: 84)

Sapir made a similar observation soon afterward in a comparison of English and Irish.

> Nowhere do we find any but superficial morphological interinfluencings… In another two or three millennia, however, the points of resemblance are likely to have become so obliterated that, in the absence of all but their own descriptive evidence, they will have to be set down as "unrelated" languages. They will still have in common certain fundamental morphological features… I cannot but suspect that many of the more significant distributions of morphological similarities are to be explained as just such vestiges.   (Sapir 1921: 203–205)

Both writers recognized that affixes can sometimes be transferred, but noted that such transfer is a by-product of lexical borrowing. If enough words are borrowed that contain a particular affix, speakers may come to recognize the form and function of the affix and begin to apply it to native stems. Abstract morphological patterns, however, particularly inflectional ones, are not viewed as borrowable.

> Il y a aussi des emprunts grammaticaux; mais, comme les emprunts de phonèmes qu'on vient de voir, ils sont liés à des emprunts de mots, et ils concernent ce qu'il y a pour ainsi dire de moins grammatical dans la grammaire. Il n'y a pas d'exemple qu'une flexion comme celle de *j'aimais, nous aimions* ait passé d'une langue à une autre; on n'emprunte une chose de ce genre que si l'on emprunte tout le système d'un coup, c'est-à-dire si l'on change de langue.   (Meillet [1914] 1958: 86–87)

> English also uses a number of affixes that are derived from Latin and Greek. Some of these foreign elements, like the *-ize* of *materialize* or the *-able* of *breakable*, are even productive to-day. Such examples as these are hardly true evidences of a morphological influence exerted by one language on another. Setting aside the fact that they belong to the sphere of derivational concepts and do not touch the central morphological problem of the expression of relational ideas, they have added nothing to the structural peculiarities of our language.   (Sapir 1921: 202)

Core argument marking of course expresses just the kind of central, inflectional relations that Meillet and Sapir were referring to.

But certain similarities among languages spoken in geographically adjacent regions call this principle into question. Northern California, well-known as a strong linguistic area (Haas 1976; Sherzer 1976; Conathan 2004; Mithun 2007; Jany 2009) exhibits tremendous genetic diversity, with over 20 distinct language families (defined in the traditional sense) represented. The map in Figure 1 shows the locations of major languages. (Individual languages in some families, such as Pomoan, are not differentiated.)

Figure 1. Northern California. From Heizer, Robert F. ed, 1978. *Handbook of North American Indians: Volume 8: California.* Washington: Smithsonian Institution. ix
The map is published with permission of Smithsonian Institution

The languages to be examined here are Chimariko, Yana, Yurok, and Karuk. Chimariko, Yana, and Karuk are generally considered isolates according to traditional measures, but during the first half of the twentieth century, various proposals were made linking them, along with a large number of other languages spoken as far away as Nicaragua, into a larger stock called 'Hokan'. The proposals have been controversial since the outset, with questions raised about whether shared features are due to common genetic inheritance or longstanding contact (Bright 1954; Bright & Sherzer 1976; Sherzer 1976; Goddard 1996; Campbell 1997: 290–305; Mithun 1999: 303–304). The issues remain open of whether there is a Hokan

unit at all, and if there is, what languages might comprise it. The fourth language examined here, Yurok, has never been included in any Hokan hypotheses. Along with its neighbor Wiyot, Yurok is remotely related to the Algonquian languages, which stretch across the continent to the Atlantic, in a family called Algic.

2.   Chimariko

The Chimariko language was last spoken in the 1930's. A brief structural overview is in Mithun 1999: 380–381. Primary documentation comes from the sources in Table 1.

Table 1. Primary documentation of Chimariko

1889	Jeremiah Curtin
1901–1902	Alfred L. Kroeber with T. Friday
1902	Pliny Earle Goddard with Sally Noble
1906	Roland B. Dixon with Polly Dyer, T. Friday
1920–1921	C. Hart Merriam with Abe Bush, Sally Noble
1926	John Peabody Harrington with Lucy Montgomery
1927	Edward Sapir with Saxy Kidd, Abe Bush, Martha Ziegler
1928	Harrington with Abe Bush, Lucy Montgomery, Saxy Kidd

A rudimentary grammatical sketch was published by Dixon in 1910 and reviewed by Sapir in 1911. More recent analysis was carried out by George Grekoff between 1950 and 1999. Grekoff's manuscript notes, dealing mainly with the extensive material collected by John Peabody Harrington, are housed at the University of California in Berkeley. Based on the Grekoff materials, Conathan has described pronominals (2002) and contact phenomena (2004), and Jany transitivity (2005), complementation (2005ms), and, more recently, the grammar as a whole (2009). Material cited here is drawn primarily from the Grekoff notes.

Core arguments are represented in Chimariko by pronominal affixes on the verb.

(1)   Chimariko pronominal prefixes
    ʔi-mumni   '**I** was running'
    mi-*mumni*   '**you** were running'
    hi-*mumni*   '**he or she** was running'
    ʔi-čut   '**I** hit him/her'
    mi-*čut*   '**you** hit him/her'
    hi-*čut*   '**he or she** hit him/her'

The affixes appear whether or not coreferential lexical nominals are also present in the clause.

(2)   Chimariko pronominal affix with coreferential nominal
    Kimaʔase   *ʔuluytaʔi*   **h**-*uwatkun*
    today   my sister **3**-came.hither
    'My sister came over today.'

There are two basic sets of pronominal affixes, which differ only in their forms for first persons. (Several of the affixes have phonologically conditioned allomorphs.)

(3)   Chimariko pronominal forms

	Set I				Set II		
1SG	*ʔi-, y-*	1PL	*ya-*	1SG	*čh(u)-*	1PL	*čha-*
2SG	*m(i)-*	2PL	*qha-*	2SG	*m(i)-*	2PL	*qha-*
3	*h(i)-*	3	*h(i)-*	3	*h(i)-*	3	*h(i)-*

Transitivity does not affect the choice of pronominal set. The system thus does not show ergative/absolutive patterning.

(4)   Chimariko Set I pronominal prefixes with intransitives: *ʔi-, y-*
    ʔi-mumni   'I was running'   *y-uwakni*   'I am coming'
    ʔi-s:iyakutni 'I looked back'   *y-ečučutapmun* 'I dodged'
    ʔi-kòt   'I am talking'   *y-eʔaqhut*   'I immersed (myself)'

(5)   Chimariko Set I with transitives: *ʔi-, y-*
    ʔi-c'iʔta   'I caught (the crawfish)'   *y-učuʔtamun* 'I jumped over (the fence)'
    ʔi-xaʔyta   'I made (the water hot)'   *y-khutni*   'I cut (my thumb)'
    ʔi-winqhutta 'I dumped (the crawfish)'   *y-ehatat*   'I had (grease)'

The two pronominal sets can distinguish grammatical role, however.

(6)   Chimariko role distinctions
    a. Set I *ʔi-č'ut*   'I hit him'   Set I   *ya-č'ut* '**we** hit him'
    b. Set II *ču-č'ut* 'he hit **me**'   Set II *čha-č'ut* 'he hit **us**'

The examples in (6) suggest a nominative/accusative system, with Set I affixes representing subjects and Set II representing objects. Pronominal affixes in both sets, however, can represent participants that would be subjects in English.

(7)   Chimariko pronominals with intransitives
    a. Set I intransitives
        ʔi-mumni   'I was running'
        ʔi-s:iyakutni   'I looked back'

ʔi-kʼot	'I am talking'
y-uwakni	'I am coming'
y-ečučutapmun	'I dodged'
y-eʔaqhut	'I immersed (myself)'

b. Set II intransitives

čhu-saxnit	'I am coughing'
čh-awin	'I am afraid'
čhu-ṭʼiʔniman	'I am glad'
*čhu-*šeyin	'I am named, called'
čhu-čxemum	'I jerk, I am shaking, twitching'
čh-akimxanan	'I am going to wash away'
čhu-saṭoʔmuxanan	'I am going to starve to death, give out'

Set I pronominals typically identify semantic agents who are in control. Other verbs that appear with Set I prefixes are those meaning 'jump around', 'eat', 'sing', '(man) to get married', 'act with the foot', 'walk draggingly or drag along', 'breathe', 'hide', 'stop or turn around', 'swim', 'fly', 'raise hand', 'cross (water)', and many more. Set II pronominals generally identify a significantly affected participant who is not in control. Other verbs that appear with Set II prefixes include those meaning 'have a rash or irritation', 'be afraid or fear', 'hurt or ache', 'be dried or parched', 'cough', 'be glad', 'fall', 'give out or be short of breath', 'sneeze', 'sweat', 'yawn', 'twitch (body part)', and 'get well or recover'. The pronominal prefixes show a semantically motivated agent/patient pattern (Mithun 1991), with Set I pronominals representing grammatical agents and Set II representing grammatical patients.

    As would be expected, the single arguments of passives are represented by Set II (patient) affixes, in keeping with their semantic roles.

(8)   Chimariko passive *-tta*

čh-akho-tta-men	'I almost got killed'
čhu-txa-tta	'I am lying here'
	lit. 'I was lifted' *itxa-tta* lift-PASSIVE

Most verbs with Set II pronominals do not contain any passive morphology, however.

    Some verbs appear with pronominal suffixes rather than prefixes. There are two sets of pronominal suffixes, whose forms resemble those of the prefixes.

(9)   Chimariko pronominal suffixes

Set I		Set II	
xama-ʔ-ta	'I have gray hair'	*puš-**či**-m*	'**I** am stooped'
*sama-**m**-ta*	'**you** have gray hair'	*puš-**mi**-m*	'**you** are stooped'
*xama-**h**-ta*	'**he/she** has gray hair'	*puš-**i**-m*	'**he/she** is stooped'

Many of the suffixed verbs are stative, but at least in the modern language they do not comprise a clear, exclusive semantic class. Some suffixed verbs denote events, such as 'dance', 'flee', 'drink', 'gamble' (Set I) and 'growl', 'blink', choke, 'get mad' (Set II). Furthermore, some prefixed verbs also denote states, such as 'be tall', 'be apt', 'be bad', 'be emaciated', 'be fat', and 'be old'. Though the original semantic basis of the system can still be perceived, pronominal choice has been lexicalized with each verb, as in most other systems of this type. It generally remained unchanged even when the meaning of the verb shifted. Speakers were not making judgments about degrees of agency or control as they spoke; they were simply making lexical choices.

The use of the pronominal affixes in modern connected speech can be seen in the text in (10), recorded by Harrington. Pronominal affixes are underlined.

(10)   Chimariko text Dailey Chased by a Bull, recorded by J.P. Harrington
       ʔi-s:iyakutni,   **h**-*aʔačhakinta*   *mušmuš ṭewu,*
       I looked back, **he** was running   cow   big

       ču-*wetxanan*   *čisit,*
       he is going to hook **me**   I said

       ʔi-mumni.
       I ran

       Dailey **hi**-*kʼot:*   *mušmuš ču-wetni,   y-ečučutapmun,*
       Dailey (**he**) said   the bull   hooked **me** **I** dodged

       hitriyteʔw   y-učʼuʔtamun.
       fence   **I** jumped over.

       h-*aʔačhamta,*   **hi**-*pikmut*   *Dailey,*   **hi**-*xomet,*
       he was running   **he** took after Dailey **he** missed

       *hitriyteʔw   **hi**-wetta.*
       fence   **he** hooked

       m-*oxowetnan,*   *phaʔyit*   *phuncarye,*
       he didn't hook **you**, thus said   his wife

       m-*uwetteʔtta*   **m**-*atehomet,*   **m**-*oxowetnatinta.*
       if he had hooked   **you** he would have killed   **you** he didn't hook **you**
       (she said)

       h-*awitomta,*   **ču**-*wetni*   *sit,*   **h**-*awitomta.*
       he was scared he hooked **me** he said   **he** was scared

       xowetnatn,
       but **he** did not hook him

       h-*ekʼomatta,*   *phaʔyit*   **ču**-*wetni*   *sit,*
       he told (everyone) thus he said he hooked **me** he said

       xowetnat   *phuncarye phaʔyit.*
       but **he** did not hook him his wife   thus she said

A closer look at the text shows that only one argument is represented pronominally in each verb. The pattern can be seen in the paradigm in (11).

(11) Chimariko paradigm

ʔi-č̓ut	'I̲ hit (him or her)'	*ču-č̓ut*	'(he or she) hit **me**'
mi-č̓ut	'**you** hit (him or her)'	*mi-č̓ut*	'(he or she) hit **you**'
hi-ch̓ut	'**he/she** hit (him or her)'		
ya-č̓ut	'**we** hit (him or her)'	*ča-č̓ut*	'(he or she) hit **us**'
qhu-č̓ut	'**you all** hit (him or her)'	*qha-č̓ut*	'(he or she) hit **you all**'

The choice of which participant to represent depends not on grammatical role but on person. Speech act participants have priority over others, that is, a first or second person is chosen over a third person for pronominal representation. (Transitive arguments are represented here with slash notation: 1/3, for example, indicates that a first person is acting on a third person, as in 'I visited **her**'. Priorities are indicated with > notation: 1 > 3 indicates that first persons are chosen over third.)

(12) Chimariko Priority I: Speech act participants over others (1, 2 > 3)

ʔi-xota-xanat	'I am going to see (him)'	**1/(3)**
mi-xotat	'**you** look at (them)'	**2/(3)**
yax̣axotanat	'**we** are not looking at him'	**1/(3)**
ču-xotamtan	'(he) is looking at **me**'	(3)/**1**
m-akhodoʔyu	'(he) might kill **you**'	(3)/**2**
ča-xotayetkut	'(he) came to visit **us**'	(3)/**1**

When both parties are speech act participants (first or second persons), agents have priority over patients for pronominal representation.

(13) Chimariko Priority II: Agents over patients (A > P)
Local relations: 1/2 and 2/1

ʔi-taykuxan	'I am going to pay (you)'	**1/(2)**
y-ewuxan ʔahatew	'I will give (you) money'	**1/(2)**
m-exotamtat noʔot	'**You** are looking at me'	**2/(1)**
(noʔot) metq̓aytantaʔahatew	'**You** deprived (me) of money'	**2/(1)**
qh-o-simxanat	'**You all** will follow me/us'	**2/(1)**
qh-o-xataxanaʔ	'Will **you all** look at me/us?'	**2/(1)**

Either argument may be identified by an independent, caseless emphatic pronoun like *noʔot* 'I myself, me myself' above, though representation is not obligatory.

If both parties are third persons, only one of them is represented by a pronominal affix. We could assume that this is the agent in accord with Priority II, but since third person pronominals have the same shape *h(i)-* in Set I and Set II, it is impossible to know for certain. (The third person pronominal *hi-* loses its vowel before another vowel.)

(14)   Chimariko third person transitives: 3/3
    hi-xomet   '**he** missed (him)'
    h-exaʔta   '**he** steals (them)'

    hi-xota-teʔw '**they** looked at (it)'
    h-atq̓awukta '**they** took it from (him)'

The Chimariko system can be summed up as follows. The forms of the modern Chimariko pronominal affixes show an agent/patient basis, in which the choice between Set I and Set II affixes originally reflected the semantic role of the referent. Pronominal choice was lexicalized with each verb, however, so speakers were not evaluating agency as they spoke. Overlaid on the agent/patient system is a priority system based on person. Only one argument can be represented pronominally on any verb. First and second persons (speech act participants) have priority over third. If both parties are speech act participants, then the agent takes priority over the patient.

(15)   Chimariko hierarchy
    Person 1,2   > 3
    Role   Agent > Patient

The roles of first person arguments are distinguished by the shape of the pronominal affix. The roles of other persons are left ambiguous.

3.   Yana

The Yana language consists of four dialects: Northern Yana, Central Yana, Southern Yana, and Yahi. The language is no longer spoken, but documentation exists in Sapir 1909, 1910, 1917, 1922, 1923, and Sapir and Swadesh 1960. Brief grammatical sketches are in Hinton 1988 and Mithun 1999: 564–566. Material cited here is in the Northern Yana dialect.

Core arguments are represented by pronominal suffixes on verbs. Third person is unmarked.

(16)   Yana pronominal suffixes: Sapir and Swadesh 1960
    1SG *-ndž(a)*   1PL *-ʔnigi*
    2SG *-ʔnu(ma)*   2PL *-ʔnuga*

The language is well-known for its distinctive speech styles. Devoicing and omission of final vowels and syllables is stylistic, reflecting the formality of the situation and relations among those present in the speech situation. The transcription conventions used in different sources vary slightly. The first person singular suffix 'I', for example, is represented variously as *-ʼnidža, -ndža, -ndž, -ʼnidjà, ndjà, ndj, -ntcʻ, -nts*, etc. Original transcriptions are retained here.

(17) Yana pronominal suffixes in verbs: Sapir 1910

    a.   1sg *-ndža*

*mósi-**ndj***	'I have eaten'	1910: 131
*kʼúnipha-**ndj***	'I would drink'	1910: 146
*móʼlaˋasi-**ntcʻ***	'I have baked'	1910: 146
*mi:gílyamài-**ts***	'I shall indeed do so'	1910: 132
*daudátts:ʼima-**ndjà***	'I always distribute it'	1910: 130
*djodunáudibilma-**ndjà***	'I always give food to everyone'	1910: 130
*tʼú:gutdima-**ndjà***	'I have always done so'	1910: 131
*kˇóduruma:-**ʼnidjà***	'I never cause any to be left over'	1910: 131
*ʻatsˋgílpha-**ndj***	'I could go into water'	1910: 137
*phu:wildjiphá-**ndj***	'I could swim across westwards'	1910: 137
*ʻáhdaiwausi-**ndj***	'I dreamt'	1910: 139
*s:áps:dadjawara-**ndjà***	'I have been sleeping soundly'	1910: 147
*úlmaì-**ndj***	'I smell it'	1910: 131
*kʼútdjuhasi-**ndj***	'I want it'	1910: 142
*kʼú:si-**ndj***	'I do not know'	1910: 130
*á:tcʼitsi-**ntcʻ***	'I feel cold'	910: 147

    b.   2sg *-ʔnu(ma)*

*mós:i-**ʼnu***	'**you** will eat'	1910: 143
*adjílsi-**ʼnu***	'**you** will dance'	1910: 144
*ulʼíʻ:ha-**nù***	'**you** did not listen'	1910: 131
*djú:dutduháinasi-**ʼnù***	'**you** will go tap for gophers' roots'	1910: 144
*ótchasi-**ʼnum***	'**you** will dig for anise roots'	1910: 143
*ga:máisi-**ʼnumà***	'**you** will get sunflower seeds'	1910: 143
*tchopha-**ʼnum***	'**you** should eat (raw food)'	1910: 146
*djuňˇá:djáspha-**ʼnù***	'**you** should have taken water on your way'	1910: 138
*tʼ u:ámmas:i-**nu***	'**you** will try'	1910: 131
*ʻaní:naʼwaipˋasi-**ʼnuma***	'**you** will try it'	1910: 143
*bódjatsˋgílpha-**ʼnu***	'**you** should put it into water'	1910: 146
*déwaigadamadjasi-**ʼnù***	'**you** shall indeed find it out'	1910: 139
*dji:djá:rupha-**ʼnum***	'**you** should go shoot them'	1910: 144
*beyús:i-**ʼnumà***	'**you** will take them along as food'	1910: 143
*á:batdisi-**ʼnu***	'**you** shall grow old'	1910: 139
*má:s:idjaha-**ʼnù***	'**you** had happiness'	1910: 139

    c.   1pl *-ʔnigi*

*uhs:í:ribalmˋgus:e-**ʼnigì***	'**we** shall remain there two nights'	1910: 143
*mótʼisi-**nìkʻ***	'**we** shall roast it'	1910: 130
*atgi:náusi-**nìkʻ***	'**we** shall go east to the next house'	1910: 131
*déwaiskhi-**nigì***	'**we** have seen'	1910: 132
*ártbilsi-**nìkʻ***	'**we** shall go about together'	1910: 181
*atdáptsʼisi-**nìkʻ***	'**we** shall go together'	1910: 183

dá:sisi-ʼnigi	'we shall catch salmon'	1910:191
ya:lílsi-ʼnigi	'we shall move'	1910:137
ya:waldísi-ʼnig	'we shall settle down'	1910:137
ʼópgadasi-ʼnigì	'we shall wait for them'	1910:137
ma:wóuxa-ʼnigì	'we take food along'	1910:137
mitsʼk̓álbasi-nig	'we shall keep it'	1910:164
yáikʼunaskʼi-nikʻ	'we are living'	1910:196
ʼátdunítdiha-ʼnikʻ	'let us go back'	1910:196
náha-ʼnigì	'let us climb'	1910:137
sí:doha-ʼnìk	'let us go to drink'	1910:137

d.   2PL *-ʔnuga*

djanáusi-nuga	'you two shall have plenty to eat'	1910:131
s:á:dips:imuigus:i-ʼnugà	'you will all soon sleep'	1910:150
ya:dísi-nukʻ	'you shall stay all night'	1910:181
di:má:n̓aigukʼun-nukʻ	'would that you (PL) might'	1910:183
waiʼmáipʼanʼha-nukʻ	'you thought'	1910:183
kʼ ú:si-nukʻ dédji	'you (girls) do not know'	1910:186
bawárus:i-nu	'you (PL) will run after him'	1910:188
djówaus:i-nukʻ	'you will offer'	1910:188
ʼémulʼési-̓nugà	'you (PL) will wrap him up with it'	1910:189
ówaltʼdagusé-̓nukʻ	'you will just go ahead and bury him'	1910:190
ʼáttcʼineʼnáigusiʼnugà	'you (PL) will go out to hunt for other food'	1910:191
di: má:n̓aigu-nukʻ	'suddenly may you experience it'	1910:198
s:útdibalkʼu-nùkʻ	'may you drop dead'	1910:198

The pronominal suffixes appear to represent subjects. The system is not ergative: the same pronominal suffixes represent agents of intransitives like 'I would go into water' and of transitives like 'I smell it'. It is not an agent/patient system: the same suffix represents the semantic agent of 'I could swim across westward' and the semantic patient of 'I feel cold'. It is not an active/stative system: the same pronominal forms are used in perfectives like 'I dreamt', perfects like 'I have eaten', habituals like 'I always distribute it', and states like 'I do not know'.

A closer look at the internal structures of the pronominal suffixes shows that they are not simply transparent combinations of subject and object markers, however. As noted, there are no third person forms. Third person transitive objects ('I will eat **it**') are simply not represented. The pronominal suffix used in a verb like 'I will eat it' is the same as that in 'I will eat.'

(18) Yana transitives: Sapir and Swadesh 1960, Sapir 1922

    a.   1SG = 1SG/(3) *-ndža*   'I'   or 'I/him, her, it, them'
        2SG = 2SG/(3) *-ʔnuma* 'you'   or 'you/him, her, it, them'

        1PL = 1PL/(3) *-ʔnigi* 'we'   or 'we/him, her, it, them'
        2PL = 2PL/(3) *-ʔnuga* 'you all' or 'you/him, her, it, them'

    b.   *moosi-**ndža***   '**I** eat (it)'   1922:233
        *bookusi-**ndža***   '**I** pound (it) up fine' 1960:44
        *oopʼulwauxa-**ndža*** '**I** gave (him) acorns' 1960:146

Third person transitive agents ('**he** will eat me') are also not represented in the pronominal suffixes. The agent is not simply omitted, however. When a third person agent is involved, an element *-wa-* is included in the pronominal suffix complex.

(19) Yana transitives: Sapir and Swadesh 1960, Sapir 1922

    a.   3/1SG   *-**wa**-ndža*   'he, she, it, they/me'
        3/2SG   *-**wa**-ʔnuma* 'he, she, it, they/you'
        3/1PL   *-ki.. **wa**-ʔnigi* 'he, she, it, they/us'
        3/2PL   *-**wa**-ʔnuga* 'he, she, it, they/you all'

    b.   *masi-**wa**-ndža*   '(he) eats **me**'   1922:233
        *tʼímnʼha-**wa**-ntcʻ*   '(he) said to **me**'   1910:195
        *dji:djá:manʼha-**wa**-ndj* '(she) seated **me**' 1910:195

The source of the *-wa-* can still be seen in the modern language. It matches a modern Yana passive suffix. Regular passives can be formed with the suffix *-**wa(ʔ(a)*** plus vocalic ablaut of the stem.

(20) Yana passive: Sapir 1922
     *moosi-**ndža*** '**I** eat (it)'   1922:233
     *mási-**wa(ʔa)*** '(it) is eaten' 1922:233

The verb for 'he eats me' is thus formally a passive: *masi-**wa**-ndža* 'I am eaten.' It shows the same vocalic ablaut in the stem as regular passives, the same suffix *-wa*, and inflection for just the semantic patient, which is formally now the subject: *-ndža* 'I'. In fact all of the pronominal suffixes in (18) above have the form of passives. These are the combinations in which a third person agent acts on a first or second person patient (3/1, 3/2). The only way to say 'he hit me' is literally 'I was hit'. The only way to say 'he hit you' is literally 'you were hit'. This is again a hierarchical system, in which only one core argument is overtly represented in the pronominal suffix. The choice is again determined by person: speech act participants have priority over others: 1, 2 > 3. The priority is maintained in two ways. When the agent outranks the patient on the hierarchy, the patient is not mentioned. When the patient outranks the agent, there is obligatory passivization.

When both participants are speech act participants (1/2, 2/1), the pronominal suffix complex is always passive in form, containing the passive element *-wa:-* followed by a pronominal element representing only the patient subject. The verb meaning 'I love you' is literally 'you are loved'; the verb meaning 'you love me' is literally 'I am loved'.

(21)   Yana local relations (1 and 2): Sapir and Swadesh 1960, Sapir 1910

2SG/**1SG**	*-wa:-dža*	'you/me'	PASSIVE-1SG
1SG/**2SG**	*-wa:-ʔma*	'I/you'	PASSIVE-2SG

kʼúːʼdamaikʼ-wa:-dj	'(you) do not love **me**'	1910: 183
dewáigadamadjasi-wa:-dj	'(you) just see **me**'	1910: 137
tʼípspʼa-wa:-dj	'(you) should have told **me**'	1910: 184
gayapʼáusi-wa:-dj	'(you) talk to **me**'	1910: 184
tʼípkʼu-wà:-tcʼ	'(you) say to **me**'	1910: 184
ʼáldjasaʼdamáisi-wá:-dj	'perhaps (you) will throw **me** away'	1910: 184
minítts'xayamaigukʼu-wà:-dj	'may (you) think about **me**'	1910: 197
tsːʼahaːʼáisi-wa:-ma	'(I) love **you**'	1910: 181
diːwáimʼ ʼdjasasinigusikʼo-wa:-ma	'(I) shall always come to see **you**'	1910: 183
tʼ ípxawa-wá:-ma	'(I) told **you**'	1910: 138
tʼippǎːxa-wa:-ʼma	'(I) told **you** before'	1910: 137
wáyuʼmáisi-wa:-ma	'(I) am afraid for **you**'	1910: 139
tcʼupp ʼáusikʼo-wá:-ma	'(I) shall be good to **you**'	1910: 184
tcupʼlíːʼasikʼo-wà:-ma	'(I) shall dress **you** well'	1910: 184

The Yana pronominal system thus shows a second hierarchy. When both participants are speech-act participants, the semantic patient is given priority for pronominal mention (Patient > Agent).

The Yana pronominal paradigm is not a simple synchronic hierarchical system maintained through omission of third persons and obligatory passivization, however. We can see the traces of person priorities in the distribution of the old passive marker, but the sentences in which verbs with this marker occur are not necessarily interpreted as modern passives. Such sentences may include lexical agents, like the white-haired man and our father in the sentences below.

(22)   Yana lexical agents: 1910: 195, 130

   a.   "*íːwul*'   *tʼímnʼha-**wa**-ntcʼ*   *aíːsirakʼaimau*   *ʼaitcʼ* *ʼiːs.*
         "Enter!"   say-PASSIVE-1SG   being.all.white-haired   the   man
         '"Enter!" said a man to me whose hair was all white.'

   b.   *tʼipkʼíaha-**wa**-nìkʼ*   *aidji*   *tsːʼgálʼlitsː.*
         tell-PASSIVE-1PL   the   my father
         'Our father told us.'

Furthermore, the pronominal suffixes are not simply intransitive subject markers with or without the passive suffix. The pronominal suffixes for 'he/me' (3/1) and 'you/me' (2/1) are both formed with a passive suffix followed by a first person pronominal suffix, but the two pronominal forms are slightly different. The same is true for 'he/you' (3/2) and 'I/you' (1/2).

(23)   Yana local participants (1,2): Sapir and Swadesh 1960

1SG	*-ndža*	'I'	2SG	*-ʔnuma*	'you'
3/1SG	*-wa-ndža*	'he/me'	3/2SG	*-wa-ʔnuma*	'he/you'
2SG/1SG	*-wa:-dža*	'you/me'	1SG/2SG	*-wa:-ʔma*	'I/you'

The intransitives and the 3/1 and 3/2 transitives show elements *-n-* and *-nu-* that do not appear in the 2/1 and 2/1 transitives. These are not the only extra elements that crop up in the pronominal suffix complexes. Sequences *-ki-*, *-m-*, and *-wi:-* also appear in some transitives.

(24)   Yana pronominal suffixes: Sapir and Swadesh 1960

1SG	*-n-dža*	'I'	1PL	*-ʔn-igi*	'we'
2SG	*-ʔnu-ma*	'you'	2PL	*-ʔnu-ga*	'you all'

2SG/**1PL**	*-ki.. wa:-gi*	'you/us'
1SG/**2PL**	*-wa-m-ʔga*	'I/you all'
2PL/**1SG**	*-wa-wi:-dža*	'you all/me'
1PL/**2SG**	*-(ki).. wa-ʔma*	'we/you all'
2PL/**1PL**	*-ki.. wa-wi:-gi*	'you all/us'
1PL/**2PL**	*-ki.. wa-m-ʔga*	'we/you all'

Sapir suggests diachronic sources for the extra elements in both paradigms, elements that were apparently added to bolster various features as the paradigms were built up over time.

The elements *-ni-* and *-nu-* in some first and second person forms can be traced to demonstratives. The proximal demonstrative 'this, near me' was added to first person forms in intransitives. The distal 'that, near you' was added to second person forms in intransitives. The same forms were used with unmentioned third person agents.

(25)   Yana demonstratives **ni* and **nu*: Sapir 1922: 23, 211

*ni	Demonstrative	**nu*	Demonstrative
	'this, near me'		'that, near you'
1SG	*-ni-dža*	2SG	*-ʔnu-(ma)*
1PL	*-ʔni-gi*	2PL	*-ʔnu-ga*

Transitive pronominal suffixes involving first person plurals include an extra element *-ki-*. Sapir traces this to a directional suffix meaning 'hither'.

(26) Yana directional *-ki-*: Sapir 1910: 26

    a.   Verbal suffix: *-ki-* hither

        ni:ˀí:kˀi'

        one. male.goes-**hither**

        'he **came** following'

    b.   Pronominal element with 'we, us': Sapir and Swadesh 1960

1SG/2SG	*-wa-ˀma*	'I/you'
1PL/2SG	*-(**ki**).. wa-ˀma*	'**we**/you'
1SG/2PL	*-wa-m-ˀga*	'I/you all'
1PL/2PL	*-**ki**.. wa-m-ˀga*	'**we**/you all'
2SG/1SG	*-wa:-dža*	'you/me'
2SG/**1PL**	*-**ki**.. wa:-**gi***	'you/**us**'
2PL/1SG	*-wa-wii-dža*	'you all/me'
2PL/**1PL**	*-**ki**.. wa-wii-**gi***	'you all/**us**'

The local transitive pronominals with second person plural agents 'you all' contain an element *-wi(:)-*. Sapir traces this to a plural suffix used with some nouns, mostly denoting humans (men, old men, chiefs, women, sons-in-law, children, orphans).

(27) Yana plural *-wi*(:)

    a.   Noun plural

        hisi 'man'   *hisi-**wi*** 'men'

    b.   Pronominal element with 'you all'

2SG/1SG	*-wa:-dža*	'you/me'
2PL/1SG	*-wa-**wi**:-dža*	'**you all**/me'
2SG/1PL	*-ki.. wa:-gi*	'you/**us**'
2PL/1PL	*-ki.. wa-**wi**:-gi*	'**you all**/us'

The transitive pronominals with second person plural patients ('you all') contain an extra element *-m-*. Sapir traces this to a reduced form of the second person pronominal *ˀma*, presumably added to reinforce the second person.

(28) Yana second person *ˀma* 'you'

1SG/2SG	*-wa-**ˀma***	'I/you'
1SG/**2PL**	*-wa-**m**-ˀga*	'I/you all'
1PL/2SG	*-(ki).. wa-**ˀma***	'we/you'
1PL-**2PL**	*-ki.. wa-**m**-ˀga*	'we/you all'

The full Yana pronominal paradigm is below, along with glosses of the elements in each string.

(29) Yana pronominal suffix paradigm

1SG, 1SG/3	*-ndža*	'I, I/him, her, it, them'	this-1SG
2SG, 2SG/3	*-ˀnuma*	'you, you/him, her, it, them'	that-2SG
1PL, 1PL/3	*-ˀnigi*	'we, we/him, her, it, them'	this-1PL
2PL, 2PL/3	*-ˀnuga*	'you all, you all/him, her, it, them'	that-2PL

2SG/**1SG**	*-waa-**dža***	'you/me'	PASSIVE-1SG
1SG/**2SG**	*-wa-**ʔma***	'I/you'	PASSIVE-2SG
2SG/**1PL**	*-ki.. waa-**gi***	'you/us'	hither-PASSIVE-1PL
1SG/**2PL**	*-wa-m-**ʔga***	'I/you all'	PASSIVE-2SG-2PL
2PL/**1SG**	*-wa-wii-**dža***	'you all/me'	PASSIVE-PL-1SG
1PL/**2SG**	*-(ki).. wa-**ʔma***	'we/you all'	hither-PASSIVE-2SG
2PL/**1PL**	*-ki.. wa-wii-**gi***	'you all/us'	hither-PASSIVE-PL-1PL
1PL/**2PL**	*-ki.. wa-m-**ʔga***	'we/you all'	hither-PASSIVE-2-2PL

The modern Yana pronominal suffixes are now fossilized units, but it is possible to discern their course of development over time. The system apparently began with subject pronominals that distinguished first and second persons, in singular and plural. Third persons were unmarked, as in many languages. At some point, a priority system arose, such that only one argument was represented pronominally on any verb. The choice of argument depended first on person and then on semantic role. Priorities were maintained by the lack of third person markers and passivization.

(30)   Yana hierarchical system
       Person   1,2   > 3
       Role   Patient > Agent

4.   Yurok

The Yurok language is spoken in the same area as Chimariko and Yana, but it is not related genetically to either. It is remotely related to its neighbor Wiyot and to the Algonquian languages. Primary documentation of the language is in Kroeber 1911, 1925, Waterman 1920, Spott and Kroeber 1942, Robins 1958, 1980, Sapir 2001, and current works by Blevins.

Yurok indicative verbs carry pronominal suffixes identifying their core arguments. The pronominals appear whether or not coreferential lexical nominals are also present in the clause. The pronominal suffixes are preceded by a thematic vowel *-e-*, *-a:-*, *-o-*, or *-o:-*. There is one set of intransitive (unipersonal) paradigms for clauses with just one animate core argument, and another set for transitive (bipersonal) paradigms involving two.

(31)   Yurok pronominals: Robins 1958: 33, 34, 71, Blevins 2011: 6
   a.   Intransitives

maʔepet	'tie up'	*koʔmoy*	'hear'
*maʔepet-e-**k'***	'**I** tie up'	*koʔmoy-o-**k'***	'**I** hear'
*maʔepet-e-**ʔm***	'**you** SG tie up'	*koʔmoy-o-**ʔm***	'**you** SG hear'
*maʔepet-**'***	'**he/she** ties up'	*koʔmoy-o-**ʔy***	'**he/she/it** hears'
*maʔepet-**oh***	'**we** tie up'	*koʔmoy-**oh***	'**we** hear'
*maʔepet-**uʔ***	'**you all** tie up'	*koʔmoy-o-**ʔw***	'**you all** hear'
*maʔepet-e-**ł***	'**they** tie up'	*koʔmoy-o-**ł***	'**they** hear'

b.

nekcen-i-cek'	'I̲ meet **you** sɢ'	*koʔmoy-o-cek'*	'I̲ hear **you** sɢ'
nekcen-e-sek'	'I̲ meet **him/her**'	*koʔmoy-o-sek'*	'I̲ hear **him/her**'
nekcen-e-c'oʔ	'I̲ meet **you all**'	*koʔmoy-o-c'oʔ*	'I̲ hear **you all**'
nekcen-e-sʔoʔ	'I̲ meet **them**'	*koʔmoy-o-sʔoʔ*	'I̲ hear **them**'
nekcen-(e-p)aʔ	'**you** meet **me**'	*koʔmoy-(o-p)aʔ*	'**you** hear **me**'
nekcen-e-seʔm	'**you** meet **him/her**'	*koʔmoy-o-seʔm*	'**you** hear **him/her**'
nekcen-oy	'**you** meet **us**'	*koʔmoy-oy*	'**you** hear **us**'
nekcen-e-ʔm	'**you** sɢ meet **them**'	*koʔmoy-o-ʔm*	'**you** sɢ hear **them**'
nekcen-e-(pe)ʔn	'**he/she** meets **me**'	*koʔmoy-o-(pe)ʔn*	'**he/she** hears **me**'
nekcen-e-yek'	'**he/she** meets **me**'	*koʔmoy-o-yek'*	'**he/she** hears **me**'
nekcen-e-yeʔm	'**he/she** meets **you** sɢ'	*koʔmoy-eʔm*	'**he/she** hears **you** sɢ'
nekcen-'	'**he/she** meets **him/her**'	*koʔmoy-ʔ*	'**he/she** hears **him/her**'
nekcen-oy	'**he/she** meets **us**'	*koʔmoy-oy*	'**he/she** hears **us**'
nekcen-e-yuʔ	'**he/she** meets **you all**'	*koʔmoy-uʔ*	'**he/she** hears **you all**'
nekcen-'	'**he/she** meets **them**'	*koʔmoy-ʔ*	's/**he** hears **them**'
nekcen-e-yeł	'**he/she** meets **them**'	*koʔmoy-eł*	's/**he** hears **them**'
nekcen-i-coh	'**we** meet **you** sɢ'	*koʔmoy-o-coh*	'**we** hear **you** sɢ'
nekcen-e-soh	'**we** meet **him/her**'	*koʔmoy-o-soh*	'**we** hear **him/her**'
nekcen-i-c'oʔ	'**we** meet **you all**'	*koʔmoy-o-c'oʔ*	'**we** hear **you all**'
nekcen-oh	'**we** meet **them**'	*koʔmoy-oh*	'**we** hear **them**'
nekcen-(e-p)aʔ	'**you** meet **me**'	*koʔmoy-(o-p)aʔ*	'**you** hear **me**'
nekcen-e-seʔm	'**you** meet **him/her**'	*koʔmoy-o-seʔm*	'**you** hear **him/her**'
nekcen-oy	'**you** meet **us**'	*koʔmoy-oy*	'**you** hear **us**'
nekcen-uʔ	'**you** meet **them**'	*koʔmoy-o-wʔ*	'**you** hear **them**'
nekcen-e-pa:ł	'**they** meet **me**'	*koʔmoy-o-pa:ł*	'**they** hear **me**'
nekcen-e-yek'	'**they** meet **me**'	*koʔmoy-o-yek'*	'**they** hear **me**'
nekcen-e-yeʔm	'**they** meet **you** sɢ'	*koʔmoy-o-yeʔm*	'**they** hear **you** sɢ'
nekcen-e-ł	'**they** meet **him/her**'	*koʔmoy-o-ł*	'**they** hear **him/her**'
nekcen-oy	'**they** meet **us**'	*koʔmoy-oy*	'**they** hear **us**'
nekcen-e-yuʔ	'**they** meet **you all**'	*koʔmoy-o-yuʔ*	'**they** hear **you all**'
'*nekcen-e-(ye)ł*	'**they** meet **them**'	*koʔmoy-o-(ye)ł*	'**they** hear **them**'

The system appears to show a nominative/accusative basis. The same sets of pronominal suffixes appear in intransitive verbs ('go slowly') and transitive verbs ('hear someone'); with intransitive agents ('camp') and intransitive patients ('be in pain'); and in event verbs ('meet someone') and state verbs ('be cold').

(32) Yurok first person pronominal suffix: Robins 1958: 33, 34, 71

ʔoɬekʷe-k'	'I camp'	*kʷoyc-o-k'*	'I go slowly'
hoʔomohtko-k'	'I hurt'	*sa:wel-e-k'*	'I am cold'
nekcenese-k'	'I meet him/her'	*koʔmoyose-k'*	'I hear him/her'

Some of the transitive pronominal complexes are transparent combinations of an object marker followed by a subject marker.

(33) Yurok transitives: Robins 1958

nekceni-c-ek'
meet-**2SG.OBJECT**-**1SG.SUBJECT**
'I meet **you** (SG)'

nekcene-p-eʔn
meet-**1SG.OBJECT**-**3SG.SUBJECT**
'**he/she** meets **me**'

nekcene-s-ek'
meet-**3SG.OBJECT**-**1SG.SUBJECT**
'I meet **him/her**'

nekcene-p-aɬ
meet-**1SG.OBJECT**-**3PL.SUBJECT**
'**they** meet **me**'

nekcene-c'-oʔ
meet-**2PL.OBJECT**-**1.SUBJECT**
'I meet **you all**'

nekceni-c-oh
meet-**2SG.OBJECT**-**1PL.SUBJECT**
'**we** meet **you**'

nekcene-sʔ-oʔ
meet-**3PL.OBJECT**-1SG.SUBJECT
'I meet **them**'

nekcene-s-oh
meet-**3SG.OBJECT**-**1PL.SUBJECT**
'**we** meet **him/her**'

nekcene-p-aʔ
meet-1SG.OBJECT-2.SUBJECT
'**you** meet **me**'

nekcene-s-eʔm
meet-**3SG.OBJECT**-**2.SUBJECT**
'**you** meet **him/her**'

But not all core arguments are represented overtly in all combinations. Third person transitive patients are often not expressed at all. The pronominal inflection of 'we hear them', for example, contains no object marker for 'them': the form is the same as that for 'we hear'.

(34) Yurok unmarked third person patients: from Robins 1958: 70

		1PL/(3PL)	=	1PL
2SG/(3PL)	= 2SG	2PL/(3PL)	=	2PL
3SG/(3)	= 3SG	3PL/(3)	=	3PL

koʔmoy-oh	'we hear'	or	'we hear them'
koʔmoy-o-ʔm	'you SG hear'	or	'you SG hear them'
koʔmoy-o-ʔw	'you all hear'	or	'you all hear them'
koʔmoy-o-ɬ	'they hear'	or	'they hear him, her, them'
nohten-'	'he or she is able'		
nekcen-'	'he or she meets him, her, them'		

Third person transitive agents are also sometimes not overtly represented. The form for 'he meets me', for example, contains no element corresponding to 'he'. Such verbs do, however, show an element -*y*- after the thematic vowel.

(35)   Yurok unmarked third person agents: from Robins 1958: 47, 70

nekcene-y-ek'	'(he/she) meets me'	*koʔmoyo-y-ek'*	'(he/she) hears me'
nekcene-y-eʔm	'(he/she) meets you sɢ'	*koʔmo-y-eʔm*	'(he/she) hears you sɢ'
nekceno-y	'(he/she) meets us'	*koʔmoyo-y*	'(he/she) hears us'
nekcene-y-uʔ	'(he/she) meets you all'	*koʔmo-y-uʔ*	'(he/she) hears you all'
nekcene-y-eł	'(he/she) meets them'	*koʔmo-y-eł*	'(he/she) hears them'
nekcene-y-ek'	'(they) meet me'	*koʔmoyo-y-ek'*	'(they) hear me'
nekcene-y-eʔm	'(they) meet you sɢ'	*koʔmoyo-y-eʔm*	'(they) hear you sɢ'
nekceno-y	'(they) meet us'	*koʔmoyo-y*	'(they) hear us'
nekcene-y-uʔ	'(they) meet you all'	*koʔmoyo-y-uʔ*	'(they) hear you all'
nekcene-y-eł	'(they) meet them'	*koʔmoyo-yeł*	'(they) hear them'

We can discern the origin of this -*y*- element in a suffix that persists in the modern language. Regular passives are formed in Yurok by adding a passive suffix to the stem after the theme vowel. One of the passive suffixes is -*y*-. The resulting passive stems are inflected as regular intransitives with the thematic vowel -*e*-.

(36)   Yurok passives: Robins 1958: 47

nekcen-	'meet'	*tmo:l-*	'shoot'
nekcen-e-y-	'be met'	*tmo:l-o-y-*	'be shot'
nekcen-e-y-ek'	'I am met'	*tmo:l-y-ek'*	'I am shot'
nekcen-e-y-eʔm	'you are met'	*tmo:-lo-y-eʔm*	'you are shot'
nekcen-iʔ	'he/she is met'	*tmo:l- iʔ*	'he/she is shot'
nekcen-e-y-oh	'we are met'	*tmo:l-o-y-oh*	'we are shot'
nekcene-y-uʔ	'you all are met'	*tmo:lo-y-uʔ*	'you are shot'
nekcene-y-eł	'they are met'	*tmo:lo-y-eł*	'they are shot'

Yurok passives, like those in other languages, are used when agents are unimportant, less topical participants or vague.

(37)   Yurok passives in use: Robins 1958: 158, 160
a.   'I love the girl at Pakʷuł. So I went to buy her, but **I was told**, "No,…"'
     gege-y-k'
     tell-**PASSIVE**-1sɢ
     'I was told'

b. 'And so the young man from Tewpos was told,
    "Your offer of a bride price **has not been accepted**."'
    nimi wo ł-iʔ
    NEG PAST take-**PASSIVE.3SG**
    'it has not been accepted'

The transitive pronominal suffixes on verbs in (34) above, with third person agents, display the internal structure of passives. The verb for 'he meets you', for example, is literally 'you are met'.

(38) Yurok passive as transitive
      nekcen-e-y-e-ʔm
      meet-THEME-PASSIVE-THEME-2SG
      'you are met' = 'he/she/they meet you'

We saw in (33) above that third person plural patients are omitted in most transitive combinations: 1PL/(3PL), 2/(3PL), 3/(PL). We saw in (34) that the passive element *-y-* appears in most verbs with third person agents acting on first or second person patients (3/1, 3/2). Together these observations suggest a hierarchical system based on person priorities, perhaps 1, 2 > (3SG) > 3PL. The pronominal suffixes do not constitute a fully regular synchronic hierarchical system maintained by obligatory passivization, however. For one thing, the hierarchy has not penetrated the entire transitive paradigm. As we saw in (32), a number of transitive prefixes contain markers for both core arguments, like *nekceni-c-ek'* 'I meet you' = meet-**2SG.OBJECT-1SG.SUBJECT**.

For another, the literal meanings of the suffix complexes do not always match their uses. The verb in (37) above translated 'he met you (SG)' has the form of a passive: *nekcene-y-e-ʔm* 'you (SG) are met', as would be expected. But the same form, still with the singular ending *-ʔm*, is also used for 'he met you all'. The regular passive 'you all are seen' ends in the second person plural suffix *-uʔ*: *nekcene-y-uʔ* meet-PASSIVE-2PL.

For some transitive combinations there are choices. For 'they/me', for example, Robins notes that either an analytic transitive form or a passive formation can be used.

(39) Yurok alternatives: Robins 1958: 70
      nekcen-e-p-a:ł   or   *nekcen-e-y-ek'*
      meet-theme-**1SG.OBJECT-**   meet-theme-**PASSIVE-**
      3PL.SUBJECT   **2SG.SUBJECT**
      'they meet me'   'I am met' > 'they hear me'

      koʔmoy-o-p-a:ł   or   *koʔmoy-o-y-ek'*
      hear-THEME-**1SG.OBJECT-**   hear-THEME-**PASSIVE-**
      3PL.SUBJECT   **2SG.SUBJECT**
      'they hear me'   'I am heard' > 'they hear me'

Transitive events with first person plural patient 'us' can be expressed with passive morphology, but these formations can differ in several ways from true passives. While true passives end in a pronominal suffix representing the patient subject ('**we** are seen'), the 'us' transitives are more often expressed with a bare passive stem.

(40)   Yurok 'us' transitives: Robins 1958:71
    new-o-y-oh   *new-o-y*
    see-THEME-PASSIVE-1PL.SUBJECT   see-THEME-PASSIVE
    'we are seen'   'you, he, she, it, they see us'

Furthermore, true passive stems are formed by adding the passive suffix *-y* after the theme vowel, yielding STEM-*e-y* or STEM-*o-y-*. The *-oy* sequence has been generalized for transitives in most verbs, however. The innovation can be seen in verbs that otherwise appear with the *-e-* thematic vowel, like *nekcen-e-* 'meet'.

(41)   Yurok 'us' transitives: Robins 1958:71
    nekcen-e-y-oh   *nekcen-oy*
    meet-THEME-PASSIVE-1PL.SUBJECT   meet-1PL
    'we are met'   'you, he, she, it, they meet us'

Alternate forms of 'us' transitives also appear with a special reinforced person ending *-ogoh*, particularly common with monosyllabic stems: *łoy* or *łoy-ogoh* 'you, he, she, it, they take us'. This person ending does not appear in true passives.

Verbs like these suggest a priority of 1PL > 3, but passivization is not forbidden in contexts where the priority is already respected, as it would be in Yana. In the example below, the passive structure was used for discourse reasons, to promote the discourse topic 'salmon'.

(42)   Yurok passivization: Robins 1958:182
    'What was done with the rest of the salmon?'

    Nekah   *kʷelekʷ*   *wonu*   *lekoᴍ-eʔy*   *ʔo*
    1PL.EMPHATIC   well   above   put.away-**PASSIVE.3SG**   LOC
    ʔoʔlep   *ku*   *ho*
    house   the   PAST
    'It was put away by us in the house up in the roof.'

The initial independent pronoun is topicalized, outside of the nuclear clause.

Taken together, the modern Yurok pronominal suffixes reflect certain person priorities.

(43)   Yurok hierarchy
    1PL > 2 > 3SG > 3PL

The strategies apparently used to achieve the priorities are reminiscent of those in Yana: omission of some third person transitive patients and passivization in certain contexts. The Yurok pronominal suffixes, like those in Yana, do not constitute a regular, synchronic, working system, however. They reflect earlier priorities whose traces have become frozen in the pronominal strings. The priorities have penetrated the Yurok system less deeply and throughly than the Yana system. For some combinations of arguments, Yurok still shows transitive suffixes with transparent markers for both subject and object. For some combinations, alternative forms still exist, one with identifiable object and subject markers, the other a passive formation.

5. Karuk

The fourth language, Karuk (also called Karok), is spoken directly to the east of Yurok. An early description of the language is in de Angulo and Freeland 1931. A fuller grammar with texts is in Bright 1957. Additional texts are in Harrington 1932a,b. Detailed discussion of the pronominal system is in Macaulay 1992 and 2000.

Core arguments are specified in Karuk by pronominal prefixes on verbs.

(44) Karuk pronominal prefixes: Bright 1957: 33, 62, 61
    ní-mniš   'I cook'
    ʔu-mniš   '**he/she** cooks'
    kun-ímnis   '**they** cook'

Some additional examples of the range of verbs that can appear with the pronominal prefix *ni-* are below.

(45) Karuk first person pronominal: Bright 1957: 63, 48, 125, 125, 125, 62
    ni-ppa:xkê:t   'I won'
    ni-ʔi:pmê:š   'I will go back'
    ni-ʔáxa:viš   'I will take it'
    ni-yú:phê:n   'I opened my eyes'
    ní-xvi:pha   'I get angry'
    ni-ʔâ:t   'I was afraid of him'

The pronominal prefixes can distinguish grammatical role.

(46) Karuk grammatical role: Bright 1957: 62, 61
    ní-mmah   'I see him'
    ná-mmah   'he sees **me**'

The system thus appears to show a nominative/accusative pattern, distinguishing subject and object categories. It is somewhat complicated by the fact that there are three series of pronominal paradigms, termed Positive, Optative, and Negative.

The system is still more complex, however. Only one argument can be expressed by the pronominal prefix in a verb. The choice of argument is not determined by syntactic function but rather by person and number. Traces of a person hierarchy similar to those in Chimariko, Yana, and Yurok, can be perceived in the pronominal paradigms. First and second persons are always chosen over third: 1, 2 > 3. As in the other languages, when a first or second person acts on a third, the third person is simply left unmentioned. The forms in (47) below are for the Positive conjugation, but the pattern is the same in the Optative and Negative conjugations.

(47) Karuk omitted third person objects: Bright 1958: 202, 204, 204

1sg/(3)	=	1sg	*ni-*
2sg/(3)	=	2sg	*ʔi-*
1pl/(3)	=	1pl	*nu-´*
2pl/(3)	=	2pl	*ku-*

ni-vâ:ramutih	'I am going upriver'	1sg
ni-pihinî:čha.	'I've gotten old'	1sg
ni-mmáhe:š	'I'll see her'	1sg/(3sg)
ni-θθâ:viš	'I'll knock them down'	1sg/(3pl)

Second person plurals are chosen over all other participants for pronominal representation.

(48) Karuk 2pl >… : Bright 1957: 60, 84

1/**2pl**	=	2pl

ki:k-ʔičunva	'**you all** hide'	**2pl**
ki:k-pákkihe:š	'I will give them to **you all**'	(1sg)/**2pl**

First persons are chosen over second singulars.

(49) Karuk 1 > 2sg: Bright 1957: 203, 168, 211, 186

2sg/**1sg**	=	1sg.object
2sg/**1pl**	=	1pl

na-ʔû:ri	'I' m tired of it'	**1sg**
ná-yaʔvhe:š	'you must hurry to **me**'	(2sg)/**1sg**
nú-ppe:š	'**we** arrive'	**1pl**
nú-vyiʔhma	'you will hear **us**'	(2)/**1pl**

Combining these priorities, we can discern traces of a person hierarchy.

(50) Karuk person hierarchy
2pl > 1 > 2sg > 3

If only one participant in transitive events is specified, and the choice of this participant is based solely on person and number, it might be wondered how the listener can tell whether the participant is acting as an agent or patient. Several strategies have developed that disambiguate.

One is similar to that seen in Chimariko. There are two forms for first person singular, *ní-* and *ná-*: *ní-mmah* 'I see him', *ná-mmah* 'he sees **me**'. When the argument represented is first person, its role is thus clear from the form of the pronominal prefix. Though the examples given earlier in (44) suggest a nominative/accusative pattern, there is some evidence of an incipient agent/patient pattern. Bright notes (1958: 59) that one set of Karuk verb stems allow alternative pronominal inflections. Verbs in this set can appear with either the first person prefix *ni-* or *na-*: *ni-xxúrihi* or *na-xxúrihi* 'I am hungry'. Other stems with this option include *ʔafitú:nva* 'be jealous', *ʔá:θva* 'be afraid', *ʔá:xhi* 'bleed', *ʔáxaska* 'be thin, lose weight', *fí:nhi* 'be bald', *furáθfip* 'be nervous, cranky, fretful', *hôtahi* 'be late, be offended', *ičnah* 'defecate', *iknax* 'be cross-eyed', *ikví:thi* 'fall asleep', *ikvúriš(rih)* 'be tired', *imčak* 'burn oneself, get burnt', *imčax* 'be hot', *imčitátko:* 'have one's bones protrude through one's skin', *imfírahi* 'feel pain', *ixrah* 'thirst for', *ixrup* 'have an erection', *kúhi* 'suffer pain, be sick', *pakyav* 'have good luck with', *sayrí:hva* 'be lonesome', *ʔrih* 'be unwilling, lazy, tired', and *yâ:vahi* 'have enough'.

Two other strategies are reminiscent of those seen in Yana and Yurok. When a first or second person acts on a third (1/3, 2/3), the prefix refers to the first or second person, and the third is simply not mentioned. Thus the prefix on a verb like 'you found it' has the same shape as a verb like 'you ran'. When a third person acts on a second person (3/2), the prefix still refers to the second person, but a suffix *-ap* appears on the verb. An effect of the suffix is to indicate that the pronominal prefix refers to a semantic patient.

(51) Karuk *-ap*
      2sg/(3)   *ʔi-*   POSITIVE
      3/2sg   *ʔi-…-ap* POSITIVE, OPTATIVE

    a.   *ʔi-*: Bright 1957: 162.3, cited in Macaulay 1992: 195
        hô:y   ***ʔi-mmá:h-ti***   *pe:=špuk.*
        where **2sg**-find-DURATIVE the=money
        'Where did **you** find the money?'

    b.   *ʔi-… -ap*: Bright 1957: 1722.22, cited in Macaulay 1992: 195
        ʔî:m   *ʔô:k*   *ke:miša* *ʔi:n*   ***ʔi-ʔav-aviš-ap.***
        outside here monster AGENTIVE **2sg**-eat-future-AP
        'A monster outside is going to eat **you**.'

(52) Karuk *-ap*
      2pl/(3)   *ki:k-ˊ*   OPTATIVE
      1,3/2pl *ki:k-ˊ-.. -ap* POSITIVE, NEGATIVE, OPTATIVE

    a.   *ki:k-ˊ*: Bright 1957: 184.103, cited in Macaulay 1992: 195
        ki:k-θárupri:ni   *páp=pa:h.*
        2pl-gnaw.through-OPTATIVE the=boat
        '[**You all**] gnaw holes in the boat!'

b. *ki:k-´-.. -**ap***: de Angulo and Freeland 1931: 215.85 cited in
    Macaulay 1992: 195

    *tah   pu=**ki:k**-tápku:pu-**ap***
    PRF   negative-**2PL**-like-**AP**
    'They do not like **you all**.'

There is no passive construction in modern Karuk (Macaulay 2000: 475), but
the distribution of the *-ap* suffix suggests that it may have had a passive origin.
The suffix appears in clauses describing transitive events in which the semantic
agent would normally be viewed as less topical or lower on a person hierarchy
than the semantic patient, such as 'A monster is going to eat you' or 'They do not
like you'. Lexical agents in such constructions also carry a special postposition
ʔi:n, labeled an agentive marker by Bright. This postposition can be seen above in
(50)b '[A monster *ʔi:n*] is going to eat you' and below following the noun phrase
'the woman' and the independent emphatic pronoun 'you'.

(53) Karuk *ʔi:n*: Bright 1958: 129, Harrington 1930: 125 cited in Macaulay
      2000: 471

      a. *pa=ʔasiktáva:n   ʔíp   ʔi̧:*
          ARTICLE=woman   NEAR.PAST   **AGENTIVE**

          n:a-ʔáxxa-:t
          1SG.OBJECT-take.from-PAST

          'The woman took it from me.'

      b. *'íim   vúra   'iin   pu-ná-iykara-eesh-ara*
          you   EMPHATIC   **AGENTIVE**   NEG-1.SG.PATIENT-kill-FUTURE-NEG
          '**You** are not going to kill me?'

Macaulay (2000) describes the use of this postposition in detail. It occurs only
in clauses describing transitive events, and 'merely reminds the hearer that
the subject [the agent] is not the most important participant in the sentence
under consideration, or conversely that the main character is being acted upon
rather than doing the acting in a particular line of text' (Macaulay 2000: 470).
The particle functions exactly like oblique agent markers in prototypical
passives.

Though Karuk now lacks a passive, it does contain a construction that func-
tions much like passives in other languages. It can background less topical agents.
Bright reports that transitive verbs with third person plural subjects and third
person objects can be interpreted as passives.

(54) Karuk vague agent: Bright 1958: 59
      a. *kun-mah*
          3PL/3SG-see
          'they see him' or 'he is seen'

b.   *kín-mah*
3PL/3PL-see
'they see them' or 'they are seen'

Further evidence that such verbs are interpreted as passives comes from the fact that agent nominals in clauses like these are accompanied by the postposition *ʔî:n*.

(55)   Karuk lexical agent: Bright 1958: 59
pa=mu-tat=ʔî:n   *kun-mah*
ARTICLE=3SG.POSSESSIVE-mother=AGENTIVE   3PL/3SG-see
'His mother sees him'

The Karuk pronominal prefix system thus shows a hierarchical system reminiscent of those seen in Chimariko, Yana, and Yurok. Apart perhaps from third person forms like those in (53), no verb contains overt reference to more than one argument. The choice of the argument to represent does not depend on syntactic role but rather on person: 2PL > 1 > 2SG > 3. As in Yana and Yurok, however, the priorities are not maintained by a regular, active synchronic system. The *-ap* suffix, which indicates that the pronominal prefix represents just the semantic patient, appears only with certain combinations of participants in certain paradigms. Macaulay summarizes its distribution in the three paradigms as in (56).

(56)   Karuk *-ap*: Macaulay 1992: 187
a.   Positive, Optative series

ki:k-´ … -ap	*ʔi- … -ap*			*ki:k-´*	2PL
1SG/2PL	3SG/2SG			*ʔi-*	2SG
3SG/2PL	3PL/2SG				
1PL/2PL					
3PL/2PL					

b.   Negative series

ki:k- … -ap	*kín-… -ap*	*kaná-… -ap*	*ki:k-*	2PL
1SG/2PL	2SG/1PL	2PL/1SG	*kín-*	1PL
3SG/2PL	3SG/1PL	3PL/1SG	*kan-*	1SG
1PL/2PL	2PL/1PL		*ná-*	1SG
3PL/2PL	3PL/1PL			
	3PL/3PL			

Though the use of the *-ap* suffix is much like the use of the passive suffixes in Yana and Yurok, it is not regular nor does it extend through the full transitive paradigm. In the Positive and Optative conjugations, the *-ap* marker appears only in verbs with second person patients. In the Negative it appears in verbs with first person patients and second person plural patients. The use of *-ap* lacks full regularity in another way. The pronominal prefix that occurs in verbs containing *-ap* usually has the same form as that occurring in intransitives, but not always within

the same conjugation. The second person singular prefix seen in *-ap* constructions in both the Positive and Optative conjugations matches the second person singular intransitive prefix only in the Positive.

(57) Karuk irregularity in prefixes

3/2sg	*ʔi-… -ap*	POSITIVE, OPTATIVE
2sg	*ʔi-*	POSITIVE
2sg	---	OPTATIVE, NEGATIVE
1,3/2pl	*ki:k-´-.. -ap*	POSITIVE, OPTATIVE
2pl	*ki:k-´*	OPTATIVE
2pl	*ku-*	POSITIVE

The Karuk pronominal system thus shows a hierarchical pattern. In general only one argument is overtly specified in any verb, and the selection of this argument depends not on syntactic function but on person: 2PL > 1 > 2SG > 3. A closer look at the pronominal paradigms indicates that this is not a regular, functioning synchronic system. The paradigms were built up over time, with different mechanisms coming into play at various points to ensure that the hierarchy was maintained and ambiguity avoided. One device was the omission of third person transitive object markers. Another was the obligatory passivization of clauses with certain argument combinations. The priorities are now simply frozen in the inflectional paradigms.

5.   Mechanisms leading to convergence

As we have seen, the four Northern California languages, Chimariko, Yana, Yurok, and Karok, all show hierarchical systems in their pronominal paradigms. Only one core argument is usually represented in any verb. The argument represented is determined not on the basis of syntactic role (such as subject) but on the basis of person and perhaps number. The parallelism in structure across the languages is striking, but obvious explanations for it are problematic. As reported by Nichols, hierarchical systems are extremely rare cross-linguistically, so the likelihood of chance similarity is low. The languages are not all genetically related, so the systems cannot be inherited from a common ancestor. The languages are all spoken in Northern California, a notorious linguistic area, so an obvious explanation for the similarity is language contact. But the mechanism by which such a system could be transferred is not obvious. Though the patterns are similar, none of the actual forms are shared. How could such abstract, fundamental structures be borrowed without the substance to carry them?

The puzzle cannot be solved by looking into earlier attestations of the languages; records of California languages do not offer philological resources comparable to

those for some European languages. A reasonable scenario emerges, however, once we introduce a longer diachronic perspective into our consideration of contact phenomena. The hierarchical systems may not have been borrowed directly. What may have been transferred were certain discourse behaviors, an increased exploitation of particular stylistic options already present in each of the languages. The increased frequency of these constructions could set the stage for subsequent developments, as they became routinized and crystallized in the grammar.

It is well known that in languages with a subject category, the subject choice is not random. Examination of spontaneous speech in English and other languages shows that subjects tend to exhibit certain features. Speakers tend to select semantic agents over patients as subjects, identifiable (definite) referents over unidentifiable (indefinite) ones, given referents (usually pronouns) over new ones (lexical noun phrases), first and second persons over third, and human referents over animals over inanimate objects (Chafe 1994). These tendencies are not unrelated. These referents make good starting points for the presentation of information. Transitive events usually begin with the action of a semantic agent. We tend to take as a point of departure knowledge shared by our listeners (including identifiable referents). We tend to maintain a single topic (a given referent) through a certain stretch of discourse. We prefer to present things from our own point of view or that of our listener (first or second person) if possible, or that of another human (with whom we can identify). In many situations all of these preferences coincide in one referent, and subject selection is easy. The agent may be identifiable, given, and first person (*I bought a new dress.*). In other cases, however, the features are spread over several arguments. In such situations speakers have options. They may choose the semantic agent over the listener: *My husband called you last night*. They may instead choose the listener over an agent, perhaps with a passive construction: *You might get stung by a bee*. Propensities for certain kinds of choices can be spread within speech communities. In some languages, for example, definiteness has apparently been given priority so often that the tendency has been solidified into a grammatical requirement: subjects must be definite.

Such stylistic tendencies can be carried easily by bilingual speakers from one language to another. What is transferred is not a grammatical structure, but rather a behavior pertaining to choices among structures already available in both languages. If speakers of one language prioritize person over semantic role in their subject selection, for example, perhaps exploiting passive constructions for this purpose, it is a simple matter for a bilingual to replicate this propensity in another language, perhaps even exploiting the passive construction of that language, if one exists. The result would be perfectly grammatical and even unremarkable in the second language. Such transfer need not involve the borrowing of specific markers at all.

We know from work by scholars of second language acquisition that transfer of discourse patterns occurs. Kaplan (1966), for example, reports that native speakers of Arabic, Romance languages, and Asian languages bring rhetorical structures from their mother tongues into written English. Examining the English of Mandarin and Japanese speakers, Rutherford observes that 'the transferable typologies – topic-prominence and pragmatic word order – are discourse phenomena, whereas the *un*transferable S, V, and O configurations are a syntactic phenomenon. I take these observations as evidence that it is therefore discourse and not syntax that gives gross overall shape to interlanguage.' (1983: 368). Bartelt finds that 'rhetorical redundancy exists in Apachean languages as a stylistic discourse feature for the expression of emphasis … Redundancy in English interlanguages of Apachean speakers is a result of transfer of a similar rhetorical technique in Apachean languages.' (1983: 298–299)

In her work on Northern California as a linguistic area, Conathan (2004) provides useful discussion of the relationships among the speech communities before contact insofar as these can be determined. We know, for example, that contact in this area goes back a long time.

> From the time of the Gunther Pattern (ca. 900 C.E.), the archaeological profile of Northwestern California shows a great many commonalities that indicate people were in contact with each other. All this indicates that language contact in Northwestern California is not a recent phenomenon, but was operative for at least a millennium.   (Conathan 2004: 175)

She also points out that the groups were small and similar in size and power.

> The population size of each group is similar, with the maximal difference (between Hupa and Wiyot) of 1300. Since these estimates are subject to many questions of accuracy, they may be considered practically equal. As a result, there was no language that was particularly dominant in terms of number of speakers.
>   (Conathan 2004: 175)

> The relations among languages in Northwestern California can be described as egalitarian. This is manifested in several ways: multidirectional bilingualism, absence of diglossia, absence of language shift, and absence of a lingua franca.
>   (Conathan 2004: 178)

The situation resembles that described by Malcolm Ross in his discussions of 'metatypy', processes in which speakers of neighboring languages begin to reorganize their 'ways of saying things', which can ultimately result in the restructuring of syntax (Ross 2001: 146).

A comparison of the hierarchical systems in the four California languages described here provides additional evidence for the borrowing of precursors to the hierarchical systems rather than the systems themselves. While all of the systems

reflect person priorities, they differ in numerous ways, ways that could not have developed from a single, fully-formed system.

The core categories at the foundations of the systems are not the same. Chimariko shows an agent/patient basis, Yana and Yurok show a subject/object basis, and Karuk shows a combination of the two.

The system appears in different areas of the grammars. It is carried by pronominal prefixes in Karuk, by pronominal suffixes in Yana and Karuk, and by both in Chimariko.

The languages show slightly different hierarchies.

(58)   The hierarchies compared
       Chimariko 1,2 > 3,   Agent   > Patient
       Yana   1,2 > 3,   Patient > Agent
       Yurok   1PL > 2   > 3SG   > 3PL
       Karuk   2PL > 1   > 2SG   > 3

This list does not fully capture the differences among the systems. The hierarchies vary in strength and extent. In Yana, the hierarchy admits no exceptions. Transitive verbs whose argument structure respects the hierarchy cannot be passivized, while all those that violate it must be passivized. Yurok, by contrast, offers some choice. For 'they hear me' (3PL/1SG), one can use either a transparent transitive pronominal suffix with markers for subject and object (*koʔmoyo-p-a:ł* hear-1SG. OBJECT-3PL.SUBJECT) or a passive form (*koʔmoy-o-y-ek'* hear-PASSIVE-2SG.SUBJECT literally 'I am heard'). The languages also vary in the extent to which all persons and numbers are involved in the hierarchy. In Chimariko, all possible combinations are accounted for by a simple person hierarchy, while in Yurok, first person singulars do not usually participate. Transitive events involving first person singulars are usually expressed with pronominal suffixes containing both subject and object markers: *koʔmoyo-p-eʔn* hear-1SG.OBJECT-3SG.SUBJECT 'he hears me'. Only one combination, 3PL/1SG 'they/me' mentioned above, offers the passive option.

The languages differ in the strategies exploited to eliminate low ranking arguments and reduce potential ambiguity. Most of the strategies appear in more than one language, but none appears in all. Low-ranking agents are eliminated by obligatory passivization in Yana, Yurok, and Karuk, but not in all contexts in the last two. Low ranking patients are simply unmentioned in Chimariko, Yana, Yurok, and Karuk, but only in certain contexts in the last two. First person agents and patients are distinguished by pronominal shape in just Chimariko and Karuk, but only the singular is differentiated in Karuk.

These are not all synchronically active systems. The Chimariko system is regular and complete. It is maintained through just two simple strategies: the omission of the lower-ranked argument and distinctive shapes for first person agents and

patients. Yana, Yurok, and Karuk, by contrast, just show traces of strategies used to preserve certain person and number priorities, which are frozen in complex pronominal affix strings. The systems show different degrees of development. In Yana, the hierarchy extends through the entire pronominal paradigm with passivization and absence of third person markers. But the development of the system did not stop there. Additional markers have been added piecemeal to the pronominal strings to reinforce certain features, some of which were obscured by the hierarchical system and some not. A proximal demonstrative was added to reinforce first person singulars in some combinations but not others. A distal demonstrative was added to second person singular forms in some combinations. A directional affix 'hither' was added to bolster first person plurals, both when they were overtly represented and when they were omitted. A plural element used with nouns was added to forms involving second person plural agents. An extra second person marker was added to forms involving second person plural patients. The Yana pronominal paradigm thus continued to evolve after the establishment of the hierarchical system. In Karuk, the effects of a hierarchical system can be seen through the full pronominal paradigm, but with different strategies for different argument combinations; an element that appears to be descended from an old passive appears in some pronominals that would violate the hierarchy, but not all. Furthermore, the shapes of the prefixes in what were apparently once passive formations do not always match their intransitive counterparts in the same conjugation. In Yurok, only slightly more than half of the indicative pronominal paradigm reflects a hierarchical system.

Thus though hierarchical systems can be discerned in all four of these Northern California languages, the systems show extensive differences. They differ in the bases of the systems (agent/patient versus subject/object), in the strategies by which they are maintained (passivization, omission of arguments, alternative pronominal shapes), and in their degree of penetration into the grammars. Such differences indicate that they are not descended from a single hierarchical system that was transferred, fully formed, through contact.

The source of the system is difficult to determine. Yurok is distantly related to its neighbor Wiyot and to the Algonquian languages, a group of more than 25 languages spoken over a wide area from the Great Plains to the Atlantic, and from Labrador south into Virginia. The Algonquian languages are well known for their hierarchical pronominal inflections, based on the hierarchy 2 > 1 > 3 > 3'. (The notation 3 is used for the most topical third person, called the proximate, and 3' for all other third persons, called obviatives.) An obvious question is whether a hierarchical system can be traced back to the common parent, Proto-Algic. It appears that seeds of the modern system could have been present in the parent, but not the fully-formed hierarchical system now found in the Algonquian languages.

The modern Algonquian languages have what is known as an inverse system. A prototypical inverse system involves a hierarchy like those based on person and number seen in the California languages. Constructions in which the semantic agent outranks the patient are formally direct, while those in which the patient outranks the agent are formally inverse. Direct and inverse constructions are distinguished by an additional affix or pair of affixes: a direct maker (which may be zero) and an inverse marker. Crucially, both direct and inverse constructions are formally transitive.

Like the Algonquian languages, the California languages seen earlier all show evidence of person hierarchies, but it is less clear whether all the forms that belong to them are formally transitive. Yana, Yurok, and Karuk might be said to show inverse markers (the *-wa-*, *-y-*, and *-ap* which came from obligatory passive markers), but a crucial feature of passives is that they are detransitivizers, and the pronominal affixes that contain them show markers for just one argument. An essential feature of all of the California systems, at least at the outset, was that no more than one argument could be expressed in the verb by a pronominal affix. We can still ask, however, whether the modern forms are understood as intransitives and whether the clauses they appear in are also intransitive. We might look to the distribution and forms of lexical nominals in the clauses in question. The appearance of two lexical noun phrases in the clause might be considered an indication of transitivity. Such clauses are quite rare in speech, however, especially in these languages. When they do occur, it could be argued that there is no evidence that both are still core arguments. We could look for case marking on the noun phrases. None of the languages shows inflectional case marking of core arguments, however. Yurok and Karuk do contain oblique markers that can appear with passive agents. The Yurok marker is apparently not obligatory, however, so it cannot serve as a diagnostic. The Karuk marker still appears on all lexical agents of *-ap* constructions, suggesting that they still have the status of formal passives. Macaulay (2000) proposes that they could be considered obviative ergatives, case markers that appear only on semantic agents of transitives that are lower in topicality than the patient of the clause.

The third branch of the Algic family, Wiyot, does not show a hierarchical system, but as Ives Goddard has pointed out (personal communication), a suffix can be seen in the Wiyot material collected by Gladys Reichard (1925: 75) that differentiates pairs of transitive verbs in constructions such as 'He spoiled the spear' and 'The spear hurt him'. In his grammar of Wiyot, Teeter gives pairs of verbs with the same gloss: *tišk-om-ił* and *tišk-omwúk-ił* 'he likes him'; *hácab-um-ił* and *hácab-**ik**-ił* 'he gives it to him' (1964: 74). There is no discussion of the difference in meaning. Goddard (1967: 67) reconstructs the Proto-Algonquian inverse suffix as **-ekw* (appearing in Cree, for example, as *-ikw*). It thus appears that the

inverse marker in Algonquian can be traced back to Proto-Algic, the ancestor of Algonquian, Wiyot, and Yurok. Modern Wiyot does not show the extensive inverse system of the Algonquian languages, however, and no marker resembling the Proto-Algonquian inverse *-ekw* appears in the Yurok pronominal paradigms. It is difficult to assess how developed a system there may have been in Algic. In any case, it is clear that the modern Yurok system does not continue one like that in the Algonquian languages. It is different in both substance and structure, formed more recently through still visible selective passivization.

The priority given second persons in the Algonquian hierarchy, and especially the priority given second person plurals in the unrelated Karuk, might be significant. The status given second persons could reflect common politeness behavior. The Karuk hierarchy could reflect a Northern California areal feature of addressing elders with second person plural forms. Such a practice was reported by speaker Frances Jack for Central Pomo (personal communication). It is of course not unlike the use of second person plurals for respect in European languages.

6.   Conclusion

It has been proposed that patterns of core argument marking have high genetic stability and strong resistance to areal influence. As such they might be good indicators of deep genetic relationships. The evidence examined here, in four languages of Northern California, suggests that such patterns may not always be so resistant to change after all. It is difficult to imagine how something as abstract and deeply entrenched in grammar as argument structure could be borrowed. Once we take a longer diachronic view, however, we can see how languages in contact might come to share just such abstract structural patterns. It may not be the grammatical structures themselves that are transferred, but the rhetorical precursors to them, increased tendencies to choose certain patterns of expression, that can set the scene for subsequent grammatical developments.

The pronominal affix paradigms in Chimariko, Yana, Yurok, and Karuk show striking structural parallels. For the most part, only one core argument can be represented overtly in a verb. The selection of which argument to represent depends not on syntactic function but on person and sometimes number. Various strategies operate in concert to ensure that only one argument is represented, that certain priorities are maintained, and that intolerable ambiguity does not result. The development of the hierarchical systems in these California languages appears to have been stimulated by language contact, as bilinguals carried a certain discourse behavior, a propensity to favor certain persons over others as subjects, from one language to another. No new grammatical structure need have been

transferred. An increased tendency to choose one stylistic option over another could set the stage for the crystallization of frequently-occurring patterns into routinized grammatical structures.

The hierarchical systems in the four California languages vary considerably in detail. Despite the similarities in abstract structure, they share no substance, no grammatical morphemes. The very foundations of the pronominal systems are not the same: Chimariko shows a basic agent/patient organization, Yana and Yurok a basic nominative/accusative organization, and Karuk a mixture of the two. The hierarchies are also not the same. The strategies that ensure that person and number priorities are preserved, that only one argument is represented, and that the role of that argument can be determined, differ from language to language as well, though evidence of most strategies can be seen in more than one language. Finally, the extent to which the hierarchical system has penetrated the grammars of the different languages varies as well. In one language it runs throughout the entire pronominal paradigm, in two others it runs through most of the paradigm, and in the fourth it runs through little more than half. The languages also vary in the regularity and transparency of the morphological elements that comprise it. The profound and superficial differences among the languages confirm the conclusion that a fully-developed hierarchy system was not transferred directly as such through contact.

With longstanding contact, languages can come to share structural features that were not necessarily borrowed directly in their modern forms. The recognition of the ways in which contact and regular processes of grammatical change can interact should prove useful both in understanding how languages evolve and in investigating deep genetic relations.

Abbreviations

IJAL   *International Journal of American Linguistics*
UCPAAE   *University of California Publications in American Archaeology and Ethnology*
UCL   *University of California Publications in Linguistics.* Berkeley: University of California

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