

THE AUX IN THE GUIPUZKOAN DIALECT OF BASQUE

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1. INTRODUCTION

This paper addresses the problem of what has traditionally been labelled Aux in Basque. The Guipuzkoan dialect of Basque¹ has, in statements, a particle sequence which occurs to the right of the verb, in sentence final position. Two examples are given in (1a) and (1b):

- (1) a. Miren itzultzen d a
Mary:abs pass:by:asp PART-Aux
'Mary passes by.'
- b. Mirenek sagarrak jan z - it - u -(e)n
Mary:erg apples:the:abs eat PART-PART-Aux-PART
'Mary ate the apples.'

The first particle in (1a) marks the person of the subject of the sentence, and the first and second particles in (1b) mark respectively person and number of the object of the sentence; the last particle marks tense.

According to the traditional analysis, the 2 particle complexes not only include person and tense markers, but above all the root of 2 verbs labelled Aux by reference to the notional category of helping verb. In (1a) and (1b), the vowel labelled Aux is respectively identified with the root of the verbs izan and ukan. The root of izan is considered to be equivalent to 'be' when used as helping verb of intransitive verbs, like in (1a); on the other hand, the root of ukan corresponds to 'have' when used with transitive verbs, like in (1b).

Further, these 2 verbs are characterized as the necessary tools for indicating temporal distinction -under the label conjugation- as in jan ditu 'he has eaten them', and jan zituen 'he ate them'. Moreover, the traditional analysis only recognizes these 2 auxiliary verbs, which, by the way, also function as main verbs. For instance,

- (2) Mikelek katuak d - it - u
Mike:erg cat:the:abs PART-PART-V
'Mike has cats.'

However, this analysis fails to explain particle sequences in which the verbal root necessary for identifying the helping verb never appears. For example, the particle complex dizkiot 'I (have) them for him' does not contain the verbal root of the auxiliary verb ukan 'have'. In fact, ukan never appears within particle sequences in which a double objective relationship shows up.

The purpose of this paper will be to give an account of the vowel variation in (1a) and (1b) conjointly with an explication of those cases which indicate a double objective relationship. In doing so, we will simply label Aux by means of a variable² X. To illustrate, notice the change in the particle complexes of (1a) and (1b):

- (1) a. d -a
PART-X
- b. z - it -u-(e)n
PART-PART-X-PART

We shall argue that this segment does not correspond to an auxiliary verb form. It will be identified as an element whose formal properties depend upon the subcategorization of the verb.

Furthermore, this paper meets another goal: it will provide evidence for identifying these particle sequences as an instantiation of the cross-linguistic category AUX as defined in (3):

- (3) Given a set of language internal analyses, in terms of constituents, those constituents which may contain only a specified (i.e., fixed or small) set of elements, crucially containing elements marking tense and/or modality will be identified as non-distinct. (Steele et al., (1981))

Furthermore, the AUX category has the following set of properties:

1. AUX is a constituent,
2. which occurs in first, second, or final position,
3. AUX contains a specified, i.e., fixed and small, set of elements,
4. which occur in a fixed order within the AUX constituent,
5. the membership of which set must include elements marking tense and/or modality, but
6. it may include, as well, elements marking subject marking, subject agreement, question, evidential, emphasis, aspect, object marking, object agreement, and negation.

The first 2 properties will not be discussed. From the outset, we assume that AUX is a constituent which may occur in initial, second from the beginning and final positions. In conclusion, we shall claim that the whole set of particles is to be called AUX, and not some part of it.

Section 2 is concerned with the internal organization of the particle sequence. It must be stressed that this analysis is carried out on strictly synchronic grounds. Maybe, Section 2 will seem overemphasized. However, it is a logical consequence of the analysis being presented in this paper. The set of particle sequences identified with AUX are too easily treated as mere idiosyncratic forms no longer analyzable into smaller units. In this section, particle sequences in intransitive and

transitive sentences will be first analyzed; then the analysis of the unlabelled segment X will be dealt with. In Section 3, we will point out the problems that the traditional auxiliary verb hypothesis poses. Given these problems, we will see how our approach solves them. Finally, in Section 4, a recapitulation of the argumentation will be presented which will require a revision of 2 empirical generalizations made in the Encyclopedia of AUX: the status of person marking as a non-definitional property must be reevaluated, and the particle sequence can contain indirect object markers for person and number.

From this discussion, we can foresee the reason why the AUX identification in Basque is important. It will allow to establish a significant correlation between sentential constituents marked for case, and the markers which are part of AUX.

2. INTERNAL ORGANIZATION OF AUX

This section is devoted specifically to showing that $\left. \begin{array}{l} \text{person} \\ \text{tense} \\ \text{transitivity/} \\ \text{intransitivity} \end{array} \right\}$

markers are the elements which, given an internal analysis for Basque, permit its identification with the cross-linguistic category AUX. These three members of the particle sequences interact with one another such that they may not be independently identifiable in every instance; however, all of them are at least notionally present in every particle sequence.

The first part of this section offers a description of a set of configurations, in which the person markers are specified. The second part presents an analysis of the unlabelled segment X conjointly with the mechanics for assigning an interpretation to ambiguous particles. At this stage, we will have discussed all the arguments which support the

claim that $\left. \begin{array}{l} \text{person} \\ \text{tense} \\ \text{transitivity/} \\ \text{intransitivity} \end{array} \right\}$ markers identify the cross-linguistic category AUX.

2.1 Person Markers

The organization of particles marking person and number will be presented in this subsection. A description of intransitive sequences will be first offered; then, a parallel analysis will be carried out for transitive sequences. In order to show the characteristics that both types of sequences share – and consequently the characteristics they do not have in common – we will introduce the notion of ergativity. It will help us to link up the particles within both types of sequences with some NP in the syntax. These particles will be crucially associated with NPs marked with certain cases. The particle referring to a NP marked ergative will be labelled K according to the case marker. The particle referring to a NP marked absolutive will be named by opposition NonK. By means of this notational device, we will show that the transitive sequences include the intransitive sequential ordering of particles. Then, we will turn to the inherent characteristic(s) which distinguish(es) transitive sequences from intransitive ones.

2.1.1 Intransitive Sequences

Let us focus our attention on simple intransitive³ particle sequences:

- (4) Miren joaten d -a
Mary go:asp PART-X
'Mary goes.'
- (5) Zuek etortzen z -era- te
you:plur:abs come:asp PART- X -PART
'You come.'

In (4) and (5), the first particle in the sequence marks the person of the subject of the sentence; the particle in final position within the sequence indicates the number of the subject. A simple representation for these particular sequences is as follows:

- | | | | |
|-----|-------------------|-------------------|-------------------|
| (6) | <u>Position 1</u> | <u>Position 2</u> | <u>Position 3</u> |
| | subject | X | subject |
| | person | | number |
| | marker | | marker |

Position 1 and Position 2 are always filled by some particle, whereas Position 3 is filled whenever the subject is plural as (5) shows. Besides having the above particles, 2 other particles can occur in intransitive particle sequences: person and number particles for indirect object. (7), (8), (9) and (10) are of this type:

- (7) aragia ederr z -a- i - o
meat:the:abs nice PART-X-PART-PART
'The meat is good to him.' or 'He likes the meat.'
- (8) aragia ederr z -a- i - o - te
meat:the:abs nice PART-X-PART-PART-PART
'The meat is good to them.' or 'They like the meat.'
- (9) gure adixkideari aintzinduko g -atza- i -zki- o
our friend:the:to go toward:asp PART- X -PART-PART-PART
'We will go to meet our friend.'
- (10) sagarrak ederr z -a- i -zki- o - te
apples:the:abs nice PART-X-PART-PART-PART-PART
'The apples are good to them.' or 'They like the apples.'

For sentences (7) to (10), the place of occurrence of the particles for indirect object are as follows:

- | | | | | | |
|------|----|---------------|---------------|---------------|---------------|
| (11) | a. | <u>Pos. 1</u> | <u>Pos. 2</u> | <u>Pos. 3</u> | <u>Pos. 4</u> |
| | | subject | X | indirect | indirect |
| | | person | | marker | object |
| | | marker | | | person |
| | | | | | marker |

b.	<u>Pos. 1</u>	<u>Pos. 2</u>	<u>Pos. 3</u>	<u>Pos. 4</u>	<u>Pos. 5</u>	
	subject	X	indirect	indirect	indirect	
	person		marker	object	object	
	marker			person	number	
				marker	marker	
c.	<u>Pos. 1</u>	<u>Pos. 2</u>	<u>Pos. 3</u>	<u>Pos. 4</u>	<u>Pos. 5</u>	
	subject	X	indirect	subject	indirect	
	person		marker	number	object	
	marker			marker	person	
					marker	
d.	<u>Pos. 1</u>	<u>Pos. 2</u>	<u>Pos. 3</u>	<u>Pos. 4</u>	<u>Pos. 5</u>	<u>Pos. 6</u>
	subject	X	indirect	subject	indirect	indirect
	person		marker	number	object	object
	marker			marker	person	number
					marker	marker

In fact, (11d) is the maximal particle sequence which can appear with intransitive sequences. From this, it is clear that the position 3 in (6), the one which is filled by a number marker for subject, is labelled 3 only in that context. Positions 3, 5 and 6, on their part, will always be filled with indirect object particles.

The following table recapitulates the place of occurrence of the different particles within the sequence. From this table, it appears that their distribution is fixed and can never be re-ordered.

(12) Table of particle position for intransitive sequences:

Positions						sentence numbers
1	2	3	4	5	6	
x	x	∅	∅	∅	∅	4
x	x	∅	x	∅	∅	5
x	x	x	∅	x	∅	7
x	x	x	∅	x	x	8
x	x	x	x	x	∅	9
x	x	x	x	x	x	10
person subject marker	X	indirect marker	subject number marker	indirect object person marker	indirect object number marker	

(21)	d	-	i	-	zki	-	o	-	te	-	zu	-	te
	PART	-	PART	-	PART								
	1		2		3		4		5		6		7
	object	-	indi-	-	object	-	indi-	-	indi-	-	subject	-	subject
	person		rect		number		rect		rect		person		number
	marker		marker		marker		object		object		marker		marker
							person		number				
							marker		marker				

'You (plur.) have them for them.'

For ease of exposition, a table is given which displays some of the possible configurations. The sequences are presented by a decreasing order of contiguous particle occurrence, i.e. from a maximal to a minimal particle sequence. The particles used in order to exemplify the various configurations are the 2nd and/or 3rd persons for singular and plural:

(22)	a.	particles for subject		
		subject	singular	plural
		person		
		2nd: -zu-	∅	-te
		3rd: ∅	∅	-te
	b.	particles for direct object		
		object	singular	plural
		person		
		3rd: d-	∅	-zki-
				-it-
	c.	particles for indirect object		
		indirect	singular	plural
		object		
		person		
		3rd: -o-	∅	-te

Before presenting the table, it must be stressed that the first places in the table (23) are crucial for the distribution of the direct object number marker. Indeed, the indirect marker -i- and the unlabelled particle X are mutually exclusive.⁵ This fact accounts for the occurrence of 2 different direct object number markers. The 1st one -it- immediately precedes the unlabelled particle; the 2nd one -zki-⁶ immediately follows the indirect marker:

(22')	direct object	direct object	X	indirect	direct object
	person marker	number marker	marker	marker	number marker
a.	d	it	u	-	-
b.	d	-	-	i	zki

The translations of the sequences in Table (23) can be found in the appendix.

(23)

	direct object person marker	direct object number marker	X	indirect marker	direct object number marker	indirect object person marker	indirect object number marker	subject person marker	subject number marker	examples
1.	x			x	x	x	x	x	x	d-i-zki-o-te-zu-te
2.	x			x	x	x	x	x	∅	d-i-zki-o-te-zu-∅
3.	x			x	x	x	x	∅	∅	d-i-zki-o-te-∅-∅
4.	x			x	x	x	x	∅	x	d-i-zki-o-te-∅-te
5.	x			x	x	x	∅	x	x	d-i-zki-o-∅-zu-te
6.	x			x	x	x	∅	x	∅	d-i-zki-o-∅-zu-∅
7.	x			x	x	x	∅	∅	x	d-i-zki-o-∅-∅-te
8.	x			x	x	x	∅	∅	∅	d-i-zki-o-∅-∅-∅
9.	x	x	x			∅	∅	x	x	d-it-u-∅-∅-zu-te
10.	x	x	x			∅	∅	x	∅	d-it-u-∅-∅-zu-∅
11.	x	x	x			∅	∅	∅	x	d-it-u-∅-∅-∅-te
12.	x	x	x			∅	∅	∅	∅	d-it-u-∅-∅-∅-∅
13.	x			x	∅	x	x	x	x	d-i-∅-o-te-zu-te
14.	x			x	∅	x	x	∅	x	d-i-∅-o-te-∅-te
15.	x			x	∅	x	x	x	∅	d-i-∅-o-te-zu-∅
16.	x			x	∅	x	x	∅	∅	d-i-∅-o-te-∅-∅
17.	x			x	∅	x	∅	∅	∅	d-i-∅-o-∅-∅-∅
18.	x			x	∅	x	∅	x	x	d-i-∅-o-∅-zu-te
19.	x			x	∅	x	∅	x	∅	d-i-∅-o-∅-zu-∅
20.	x			x	∅	x	∅	∅	x	d-i-∅-o-∅-∅-te
21.	x	∅	x			∅	∅	x	x	d-∅-u-∅-∅-zu-te
22.	x	∅	x			∅	∅	x	∅	d-∅-u-∅-∅-zu-∅
23.	x	∅	x			∅	∅	∅	x	d-∅-u-∅-∅-∅-te
24.	x	∅	x			∅	∅	∅	∅	d-∅-u-∅-∅-∅-∅

(23) is a descriptive sample of various configurations of particle sequences. The number of possible combinations among particles is amazing if one takes into account that subjective and objective⁷ particles can combine together according to person and number. Besides having second person particle for the singular, Basque also differentiates the second singular person with regard to the sex of the addressee.⁸ Therefore, there are 8 particles marking person. As for number, the second and the third persons add a plural particle. The other persons have their number indicated by the person particle itself. For example, the -gu particle always indicates first person plural.

Although the various combinations seem overwhelming, the inventory of particles is fairly small and fixed. In fact, when comparing (24) with (13), (24) appears to be identical with (13). Thus, the same set of particles is used by both types of sequences. The only restriction bearing upon this set is that the particles must not be labelled according to the grammatical function of the NPs they refer to. In that sense, table (13) is misleading. Table (24), then, specifies the actual forms of particles for person and number disregarding any grammatical function label such as subject or object.

(24)	person	number
singular	1. n-, da-, t-	
	2. zu-	
	3. d-, z-, o-	
plural	1. gu-	
	2. zu-	te-
	3. d-, z-, o-	zki-, it-, te-

2.1.3 Conclusion

To sum up, let us compare the information in (12), (13), (23) and (24) with the brief presentation on ergativity given earlier. The first particle of intransitive and transitive sequences always refers to an unsuffixed NP in the sentence. This NP is either the subject of an intransitive sentence or the object of a transitive one. This particle, which crucially marks person, was named NonK. The first particle, then, is common to intransitive (IS) and transitive (TS) sequences:

(25)	IS:	$\left[\begin{array}{c} \text{NonK} \\ \\ \text{person} \end{array} \right]$	TS:	$\left[\begin{array}{c} \text{NonK} \\ \\ \text{person} \end{array} \right]$
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Moreover, tables (12) and (23) show that IS and TS place the unspecified particle X in second position; the configuration is consequently:

(26)	IS:	$\left[\begin{array}{c} \text{NonK} \\ \\ \text{person} - X \end{array} \right]$	TS:	$\left[\begin{array}{c} \text{NonK} \\ \\ \text{person} - X \end{array} \right]$
------	-----	---	-----	---

The particle sequence in the following sentence satisfies the minimal configuration of IS (26):

- (27) Ni itzultzen n -aiz
 I pass:asp PART- X
 'I pass by.'

In order for TS (26) to be an appropriate configuration of (28):

- (28) Zuk ikusten n -au- zu
 you:erg see:asp PART- X -PART
 'You see me.'

a particle which refers to the NP marked for ergativity must be introduced in the sequence. It too indicates person. It was labelled K.

- (29) TS: $\left[\begin{array}{cc} \text{NonK} & \text{k} \\ | & | \\ \text{person} - \text{X} - \text{person} \end{array} \right]$

We have seen that these internal organizations correlate with the small inventory of particles. Indeed, a particle like 'n' is assigned a value depending on the configuration of the whole sequence. Therefore, 'n' could function either as the particle subject referring to a NonK NP-subject in the sentence, or as the particle object referring to a NonK NP-object in the sentence. At this stage, we would say that the ambiguity of the value particle in Position 1 for IS and TS in (25) is cleared up by the cooccurrence of the particle K.

So far, evidence has been given for the internal organization of two different types of sequences.⁹ A sample of possible combinations of subjective and objective particles has been presented. Furthermore, it appears that there is no need for the particle inventory to be large since a value is assigned to a particle in relation with the cooccurrence¹⁰ of other particles. In Section 2, three of the AUX properties have been discussed, namely: property 3 (the complex sequence contains a specified set of elements); property 4 (which occur in a fixed order); and, property 6 (the sequence includes elements marking person and number for subject, direct and indirect objects).¹¹

2.2 The Unlabelled Segment X

In this section, an analysis of the unlabelled segment X will be offered. Its identification will follow a two-step strategy. Firstly tense markers will be differentiated within the unlabelled segment X and given an individual status. In treating tense, in this subsection, we will only deal with markers which overtly indicate tense and non-third person in present sequences. An account of the exceptions--third person in past sequences and non-overt tense--will depend upon the analysis of the segment X to which we will turn immediately after overt tense has been dealt with. Evidence will be provided for identifying the unlabelled segment X as the slot into which specific forms are inserted that correspond to the argument structure of the main verb. The formal content of

X will be specified by means of superscripts which correspond to the number and type of arguments a V is subcategorized for. Thanks to this device, 4 different types of particle sequences will be distinguished. Finally, we will return to particle sequences in which tense is not overtly indicated. This last analysis will substantiate the claim that

$$\left. \begin{array}{l} \text{person} \\ \text{tense} \\ \text{transitivity/} \\ \text{intransitivity} \end{array} \right\} \text{ markers are crucial for the identification of the}$$
 cross-linguistic category AUX.

2.2.1 Overt Tense

The particle sequences which have so far been presented indicate present tense. In order to give evidence of how tense is indicated, we must focus on past tense sequences for comparison:

- (30) ni ona n -[a-iz]
 I:abs nice:the:abs PART- X
 'I am nice.'
- (31) ni ona n -[in-tza]- n
 I:abs nice:the:abs PART- X -PART
 'I was nice.'
- (32) Zuk joten n -[a-u]- zu
 you:erg slap:asp PART- X -PART
 'You slap me.'
- (33) Zuk jo n -[ind-u]- zu -(e)n
 you:erg slap PART- X -PART-PART
 'You slapped me.'

For ease of description and explanation, further particle sequences marked either for present or past are presented below:

- (34) sequences marked for present
1. n -[a-u]- zu - te
 PART- X -PART-PART
 2. d -[a-u]
 PART- X
 3. g -[a-tza]- i -zki- o
 PART- X -PART-PART-PART
- (35) sequences marked for past
1. z -[ind-u]- te - n
 PART- X -PART-PART
 2. z -[end-u]- (e)n
 PART- X -PART
 3. g -[in-tza]- i zki o n
 PART- X -PART-PART-PART-PART

The crucial difference between (38) and (41) is that their AUX 'agree formally' with the number of arguments the main verb demands. The verb aintzindu in (38) is subcategorized for 2 arguments; mainly a NP-subject and a NP-indirect object. Thus, the precise formal properties of AUX must reflect the argument types of V. The formal exclusion of a NP-object is indicated by a certain particle taken from a set of particles. In this case, the particle -tza- refers to the NP-subject. On the other hand, the marker -i- refers to the NP-indirect object. Since both -tza- and -i- indicate the V arguments, it is convenient to collapse them under X. A superscript could be assigned to X which indicates the number of arguments. The particle sequence configurations for (41) and (38) are respectively as follows:

(42) Intransitive sequence:

n	- a	- iz ¹⁶									
<table style="border-collapse: collapse; width: 100%;"> <tr> <td style="padding: 5px 10px 0 10px;">NonK</td> <td style="padding: 5px 10px 0 10px;"></td> <td style="padding: 5px 10px 0 10px;"></td> </tr> <tr> <td style="border-top: 1px solid black; padding: 5px 10px 0 10px;"> </td> <td style="border-top: 1px solid black; padding: 5px 10px 0 10px;"></td> <td style="border-top: 1px solid black; padding: 5px 10px 0 10px;"></td> </tr> <tr> <td style="padding: 5px 10px 5px 10px;">person</td> <td style="padding: 5px 10px 5px 10px;">- tense</td> <td style="padding: 5px 10px 5px 10px;">- X¹</td> </tr> </table>			NonK						person	- tense	- X ¹
NonK											
person	- tense	- X ¹									

(43) Intransitive-indirect sequence:

g	- a	- tzai	- zki	-o															
<table style="border-collapse: collapse; width: 100%;"> <tr> <td style="padding: 5px 10px 0 10px;">NonK</td> <td style="padding: 5px 10px 0 10px;"></td> <td style="padding: 5px 10px 0 10px;"></td> <td style="padding: 5px 10px 0 10px;"></td> <td style="padding: 5px 10px 0 10px;">indirect</td> </tr> <tr> <td style="border-top: 1px solid black; padding: 5px 10px 0 10px;"> </td> <td style="border-top: 1px solid black; padding: 5px 10px 0 10px;"></td> <td style="border-top: 1px solid black; padding: 5px 10px 0 10px;"></td> <td style="border-top: 1px solid black; padding: 5px 10px 0 10px;"></td> <td style="border-top: 1px solid black; padding: 5px 10px 0 10px;">object</td> </tr> <tr> <td style="padding: 5px 10px 5px 10px;">person</td> <td style="padding: 5px 10px 5px 10px;">- tense</td> <td style="padding: 5px 10px 5px 10px;">- X²</td> <td style="padding: 5px 10px 5px 10px;">-.....-</td> <td style="padding: 5px 10px 5px 10px;">-person</td> </tr> </table>					NonK				indirect					object	person	- tense	- X ²	-.....-	-person
NonK				indirect															
				object															
person	- tense	- X ²	-.....-	-person															

An analysis of (39) and (40) shows that the V eraman requires either 2 or 3 arguments. Again, the AUX formally indicates them with appropriate particles. In case of 2 arguments, eraman will be subcategorized for a NP-subject and a NP-object. The actual form occurring in the X slot is -u-. The configuration for (39) is:

(44) Transitive sequence:

n	- a	- u	- ø ¹⁷												
<table style="border-collapse: collapse; width: 100%;"> <tr> <td style="padding: 5px 10px 0 10px;">NonK</td> <td style="padding: 5px 10px 0 10px;"></td> <td style="padding: 5px 10px 0 10px;"></td> <td style="padding: 5px 10px 0 10px;">K</td> </tr> <tr> <td style="border-top: 1px solid black; padding: 5px 10px 0 10px;"> </td> <td style="border-top: 1px solid black; padding: 5px 10px 0 10px;"></td> <td style="border-top: 1px solid black; padding: 5px 10px 0 10px;"></td> <td style="border-top: 1px solid black; padding: 5px 10px 0 10px;"> </td> </tr> <tr> <td style="padding: 5px 10px 5px 10px;">person</td> <td style="padding: 5px 10px 5px 10px;">- tense</td> <td style="padding: 5px 10px 5px 10px;">- X²</td> <td style="padding: 5px 10px 5px 10px;">- person</td> </tr> </table>				NonK			K					person	- tense	- X ²	- person
NonK			K												
person	- tense	- X ²	- person												

In case of 3 arguments as in sentence (40), the configuration is:

(45) Transitive-indirect sequence:

d	- i	- zu	- t												
<table style="border-collapse: collapse; width: 100%;"> <tr> <td style="padding: 5px 10px 0 10px;">NonK</td> <td style="padding: 5px 10px 0 10px;"></td> <td style="padding: 5px 10px 0 10px;">Indirect</td> <td style="padding: 5px 10px 0 10px;">- K</td> </tr> <tr> <td style="border-top: 1px solid black; padding: 5px 10px 0 10px;"> </td> <td style="border-top: 1px solid black; padding: 5px 10px 0 10px;"></td> <td style="border-top: 1px solid black; padding: 5px 10px 0 10px;"> </td> <td style="border-top: 1px solid black; padding: 5px 10px 0 10px;"> </td> </tr> <tr> <td style="padding: 5px 10px 5px 10px;">person</td> <td style="padding: 5px 10px 5px 10px;">- X³</td> <td style="padding: 5px 10px 5px 10px;">- person</td> <td style="padding: 5px 10px 5px 10px;">- person</td> </tr> </table>				NonK		Indirect	- K					person	- X ³	- person	- person
NonK		Indirect	- K												
person	- X ³	- person	- person												

Notice that tense is not overtly marked in this last configuration. We will return to this in a moment, but some further remarks about X are in order first.

To sum up, it appears that X^1 , X^2 and X^3 not only specify the number of arguments the V must or may require, but also indicate which grammatical function must be assigned to the NonK particle. Syntactically, it refers either to a NP-subject in case of an intransitive sentence, or to a NP-object in case of a transitive sentence.

If the 4 configurations make clearer the internal organization of the various sequences, the superscript 2 in X^2 is ambiguous. Indeed, it could refer either to (43) or (44). A refinement of the notation is needed in order to avoid this confusion. Since AUX can indicate maximally the presence of 3 arguments, let the superscripts mark the type of arguments the particles refer to. Thus, 1 will be used when AUX takes only one particle which is linked to a NP marked NonK; 2 for a particle tied to a NP marked K; and 3 for a particle referring to a NP marked -i-. Hence, the possible combinations are:

- (47) X^1 : $\left[\begin{array}{c} \text{NonK} \\ | \\ \text{NP-subject} \end{array} \right]$
- X^{13} : $\left[\begin{array}{cc} \text{NonK} & + i \\ | & | \\ \text{NP-subject} & \text{NP-indirect object} \end{array} \right]$
- X^{12} : $\left[\begin{array}{cc} \text{NonK} & K \\ | & | \\ \text{NP-subject} & \text{NP-object} \end{array} \right]$
- X^{123} : $\left[\begin{array}{ccc} \text{NonK} & i & K \\ | & | & | \\ \text{NP-subject} & \text{NP-indirect object} & \text{NP-object} \end{array} \right]$

X^3 never occurs. It seems, however, that X^2 must be postulated for a small set of verbs. X^2 will restrict the possible overt NPs in the sentence to one NP marked K. For example,

- (48) Odolak irakitzen d -u- \emptyset
 blood:the:erg boil:asp PART-X-PART
 'The blood boils.'

However, in this case, AUX always keeps the first particle NonK. The following sentence would be ungrammatical:

- (49) *Odolak irakitzen u- \emptyset
 blood:the:erg boil:asp X^2 -PART

The first particle in (48) which does not refer to any NP in the sentence can be designated as a "dummy element".

As a further example, let the particle sequence be analyzed as follows:

- (50) Zuk ni joten n - a - u - zu
 you:erg me:abs slap:asp $\left[\begin{array}{ccc} \text{person-tense-}X^{12}\text{-person} \\ | & & | \\ \text{NonK} & & K \end{array} \right]$
 'You (sg) are kicking me.'

The consequence of having X^{12} is that the NonK, i.e. X^1 , will be interpreted as referring to an overt (or not) NP-object in the sentence.

As for gatzaizkio, X^2 in (43) will be reanalyzed as X^{13} . For example:

- (51) (gu) gure adixkideari aintzinduko
 we our friend:the:to go:toward:asp
- | | | | | |
|----------|--------|------------|-------|----------------------|
| g | -a | -tzai | -zki | -o |
| | | | | |
| [person | -tense | - X^{13} | -PART | -person |
| | | | | |
| [NonK | | | | Indirect
object] |

'We'll go to meet our friend.'

2.2.3 Non-Overt Tense

Thanks to the discussion provided in the 2 previous subsections (2.2.1. and 2.2.2.), sequences in which non-overt tense shows up can be dealt with. This discussion is crucial since it could, at first sight, jeopardize the claim that there is an AUX in Basque. Indeed, the cross-linguistic category AUX is defined in terms of its marking tense and/or

modality. We will argue that $\left\{ \begin{array}{l} \text{person} \\ \text{tense} \\ \text{transitivity/} \\ \text{intransitivity} \end{array} \right\}$ markers interact with one

another such that all of them are at least notionally present in every particle sequence, although they may not be independently identifiable.

Earlier, it has been seen that tense is not overtly marked when the argument slot is filled with X^{123} as in

- (52) d - i - zki - o
 PART- X^{123} -PART-PART
 'He (has) them for him.'

or with X^{12} as in

- (53) d - u - t
 PART- X^{12} -PART
 'I have it.'

Notice that the person of the NonK particle is third. When this type of sequences is opposed to a particle sequence as

- (54) z - i - o - n
 PART- X^{123} -PART-tense
 'He (had) it for him.'

in which the final part of the discontinuous past marker shows up, it appears that (i) the third person has allomorphic variants and (ii) the particle itself is different for different tenses and thus expresses

tense: d- for present, and z- for past. As for (ii), how can the particle z- be made not ambiguous? Compare the following minimal pairs:

- (55) a. z - i - o - n
PART-X¹²³-PART-tense
'He (had) it for him.'
- b. z - en - i - o - n
PART-tense-X¹²³-PART-tense
'You (had) it for him.'
- (56) a. z - a - n
PART-X¹-tense
'He was.'
- b. z - in - a - n
PART-tense-X¹-tense
'You were.'

Since the allomorphic variants for the third person particle indicate tense, the second position within the sequence which normally contains tense is immediately filled up with the argument specification X. If z- must be interpreted as second person, the second slot must contain overt tense. The rule, as stated in (57), will assign the correct interpretation to the first particle.

(57) Interpretation assignment rule:

Whenever an interpretation cannot be assigned to a particle in case of allomorphic variants, go one step further into the sequence until the ambiguity is cleared up.

In this section, tense has been identified and consequently separated from X. It has also been shown that whenever tense is not overtly marked, the person would indicate it by using allomorphic variants. The particle X, on its part, has been equated with a set of particles which correspond to the number of arguments a V requires. This claim will be further sustained in the following section which discusses a small set of verbs whose roots could be inserted in the argument slot.

3. A REVISION OF THE TRADITIONAL APPROACH

The segment we have just given an analysis for--specifically the elements of AUX labelled X--is what other linguists¹⁸ refer to as an auxiliary verb. They assume that the category V includes

- (58) v [Verb + Aux]

To illustrate, consider the following sentence:

- (59) joan naiz
go I:am
'I have gone.'

In other words, a non-finite form of the verb can be followed by a finite form of the verb.

There are 2 reasons that people have called the segment X an auxiliary verb, that is, have identified this element with the class verb albeit an irregular portion of that class. Firstly, they analyze the segment X as the verbal root of izan 'be', or ukan 'have'. Secondly, the segment X can be replaced by the root of a small set of what are otherwise demonstrably verbs.

Given our analysis of the segment X, we will provide evidence against those 2 claims. The major argument against the first claim resides in the fact that the roots of izan and ukan do not cover the vowel variation in the segment X; the second argument against X being equated with the root of a small number of verbs resides in the fact that a treatment can be provided which (i) does not deny their status as verbs and (ii) still maintains the distinct status of AUX.

We turn now to the first argument. The strict distinction established by previous accounts between the 2 verbs izan 'be' and ukan 'have', according to their intransitivity and transitivity, cannot capture the morphological generalization made earlier with regard to the formal properties of X. For instance, if a verb has the following possible argument structure:

(60) [NP-subject - NP-object - NP-indirect object - V]

its crucial characteristic, then, is its requiring from 2 NPs to 3 NPs. To illustrate, consider the following 2 sentences:

(61) aurrak txakurra ekarriko
 children:erg dog:the:abs bring:asp

d	-u	-∅	-te
NonK		K	
person	-x ¹²	-person	

'The children will bring the dog.'

(62) aurrak Mikeli katua ekarriko
 children:erg Mike:to cat:the:abs bring:asp

d	-i	-o	-∅	-te
NonK		indirect object	K	
person	-x ¹²³	-person	-person	

'The children will bring the cat for Mike.'

The actual form of X depends upon the arguments of V. If it were true X is the root of ukan in (61), how does the traditional analysis account for X in (62)? The traditional analysis would need either a third verb whose root corresponds to the form of X in (62), or a list of purely idiosyncratic forms which appear whenever V requires a 3 argument structure.¹⁹

On the other hand, the formal properties of X under our analysis is solely dependent on the lexical information of V.²⁰ The non-occurrence of -u- in (62) becomes, then, a logical consequence of the possible double specification of ekarri 'to bring something to somebody'.

The second argument deals with a small set of verbs whose root may occur in the argument slot. Some of those verbs are listed below:

- (63) jayo 'to lay down'
 eramam 'to carry'
 ibilli 'to walk'
 jakin 'to know'
 ikusi 'to see'
 etorri 'to come'

To illustrate, notice the configurations in which their roots occur:

- (64) n -a -bil
 [NonK
 |
 person -tense -walk]
 'I walk.'

- (65) d -a -kar -zu
 [NonK K
 | |
 person -tense -bring -person]
 'You (sg) bring it.'

How can these verbs be integrated into our analysis of AUX. We demonstrated earlier that the AUX configuration is crucially specified for the 3 first positions:

- (66) [NonK
 |
 person -tense -X.....]

The actual form of X is unspecified. However, X cannot stay empty: it must have some phonetic content. The segment X may be filled up in 2 ways: either the form of X corresponds to the arguments of V, or X is replaced by some verbal root. We assume that the lexicon would provide the information as to which verbs have their root occurring into the X slot. In any case, the set of these verbs is fairly small (± 20), and the occurrence of a verbal root in the slot X is not a productive process.

In connection with this argument, let us turn to an examination of sentences containing the Basque equivalent of 'be' and 'have'. The traditional analysis--according to which the segment X contains forms of auxiliary verbs--might very well be, in this respect, partially right. We have just shown that some verbal roots may occur in X. The symbol \emptyset stands for no instance of V on the left of the particle complex:

- (67) nere katua \emptyset d- a - kar -t
 my cat:the:abs it-present-bring-I
 'I am used to bring my cat.'

- (68) ekarriko d- u -t
bring:asp it- { present } -I
{ transitive }

'I will bring it.'

In (68) when the verb stays outside of the particle complex, the formal property of X, as we predicted earlier, reflects the argument structure of V. Let us compare now (67) and (68) with the Basque equivalent of 'be'.

- (69) atzo illun ∅ n- in - tza - n
yesterday sad:abs I-past-intransitive-past
'Yesterday, I was sad.'

- (70) eri izan n- in - tza - n
ill:abs be I-past-intransitive-past
'I was (preterit) ill.'

In (69), we may suppose that -tza- is the verbal root of a verb²¹ as -kar- is in (67). The instance of 'be' in (70) would provide evidence for identifying the formal property of X with the root of izan in (69) and (70). The traditional analysis has taken this tack. Indeed, the particle complex in (69) appears with intransitive verbs:

- (71) ibilli nintzan
walk I:was
'I walked.'

However, the traditional analysis gets into trouble when dealing with the equivalent of 'have'. If it identified the root -u- with some verb, namely ukan, as it identifies -za- with 'be' in (69), (70) and (71), we might expect V to occur outside of the particle sequence. Such is the case with izan in (70). Unfortunately, the traditional auxiliary verb ukan does not show up. To illustrate, consider the following sentences:

- (72) txakurra ∅ d- u -t
dog:the:abs it- { present } -I
{ transitive }

'I have a dog.'

- (73) *txakurra ukan d- u -t
dog:the:erg have it- { present } -I
{ transitive }

'I have had a dog.'

Hence, -u- does not correspond to the root of a V which has been inserted into the particle sequence because there is no access to such a verb, contrary to the cases in (67) and (68). Moreover, the traditional analysis must be rejected on the ground that its attempt to capture synchronical facts is essentially carried out by providing historical evidence to its claim. Further, the shape of X in case of 3 arguments is not dealt with satisfactorily. Since it recognizes only 1 transitive verb

that a sequence may express, besides tense, subject and a double objective relationship for number and person by means of a small and fixed set of particles. A configuration for the organization of the various particles has been proposed. It specifies the distribution of particles within the AUX. It also associates, in the syntax, some particles with some NPs which are the arguments of the verb.

The set of possible elements included by Steele et al. in the sequence does not contain indirect object marker for person and number. The empirical generalization drawn from the languages which were studied is the following:

- (77) These include elements indicating subject marking, subject agreement, aspect, question marking, object marking, object agreement, and negation. That is, any element identified by the definition may include items marking some subset of these notional categories, but it is limited to these (146).

Instead of expanding the set of properties in order to include indirect object marking for person and number, it would be simple to have markers for person and number without specifying the type of arguments they refer to. Given the analysis internal to a language L, it might be the case that L requires another type of marking for a different NP-argument.

One of the crucial elements which allows an identification of AUX is tense. Our analysis of tense has shown that it may not be overtly marked. Moreover, when it is not marked, the only marking which is always required is person marking. This fact does not jeopardize the claim that tense is a definitional property of AUX. However, the problem that person marking²³ raises--by being always indicated when tense is not--needs further investigation.

From our viewpoint, what is crucial is not whether the analysis proposed turns out to be completely correct in the details. The exact forms that particles may have need still to be more precisely specified; indeed, phonological processes have altered their shape. Moreover, it would be critical to ask whether there is any valid syntactic test for proving the constituency of AUX that we have assumed throughout this paper; and there are reasons to think that AUX is a constituent in Basque. Ultimately, such inquiry will test the empirical generalization drawn by Steele et al., which is related to the various positional possibilities of AUX in a sentence.

Concerning the analysis of X, there is a lot more to say, but the configuration proposed for AUX can be accepted as a good approximation and an adequate basis for exploring the properties of AUX more accurately.

APPENDIX

Translations of The Sequences in Table (23)

1. dizkiotezute: you (pl) have them for them
2. dizkiotezu: you (sg) have them for them
3. dizkiote: he has them for them

4. dizkiote(e): they have them for them
5. dizkiozute: you (pl) have them for him
6. dizkiozu: you (sg): have them for him
7. dizkiote: they have them for him
8. dizkio: he has them for him
9. dituzute: you (pl) have them
10. dituzu: you (sg) have them
11. dituzte: they have them
12. ditu: he has them
13. diotezute: you (pl) have it for them
14. diote(te): they have it for them
15. diotezu: you (sg) have it for them
16. diote: he has it for them
17. dio: he has it for him
18. diozute: you (pl) have it for him
19. diozu: you (sg) have it for him
20. diote: they have it for him
21. dezute: you (pl) have it
22. dezu: you (sg) have it
23. dute: they have it
24. du: he has it

FOOTNOTES

¹All the examples are taken from the Guipuzkoan dialect of Basque. The particle complexes in the other dialects are similar in many respects; however, the actual forms of the particles may vary.

²The variable X is used as a means of indicating that the actual form of the particle is not specified. X will be analyzed and explained in Section 2.2.2.

³Although the labels intransitive and transitive are not extremely felicitous, they will be kept for ease of description. The distinction between intransitive and transitive that we assume is as follows: the verb is intransitive when it is not subcategorized for a NP-object. Consequently, a verb is transitive when it is subcategorized for a NP-object.

⁴For ease of exposition, a \emptyset marker is indicated. It is not realized phonetically.

⁵Later in the paper, it will become clear why this mutual exclusiveness explains the inappropriateness of the labels intransitive and transitive for particle sequences. Although -i- has been identified, we stipulate that this marker is in fact a member of the unlabelled particle X. The mutual exclusiveness between -u- and -i- is a consequence of the above claim.

⁶Given a synchronic analysis, compare the following pair:

a.	d	-i-	o	-	\emptyset	and b.	d	-i-	zki-	o	-	\emptyset
	PART-X-PART-PART						PART-X-PART-PART-PART					
	'He (has) it for him.'						'He (has) them for him.'					

⁷Direct and indirect objective particles.

⁸In this paper, however, feminine and masculine markers are not looked at.

⁹The only marker which could interrupt the sequence [NonK-X] is the direct object plural marker -it-. See Table (21) and its comment. This is not a major shortcoming.

¹⁰See Footnote 4.

¹¹A refinement for these sequence types will be offered.

¹²We'll go into some details in the following subsection.

¹³These elements are only a subset of the non-definitional elements that the Basque AUX may include such as negation, question marking, modality....

¹⁴See Page 68.

¹⁵The English translation is misleading. The Basque verb aintzindu does not allow any object NP.

- 16¹⁶The set of forms will still have to be more rigourously specified.
- 17¹⁷Recall that third person is marked \emptyset .
- 18¹⁸They adhere to a traditional analysis of helping verb.
- 19¹⁹There is a third possibility that we mention in the following pages.
- 20²⁰See our section on the segment X.
- 21²¹Some phonological processes have altered the shape of -za-. But we are not concerned with them here.
- 22²²We already know that AUX is sensitive to 3 types of NPs: NP-subject, NP-object and NP-indirect object.
- 23²³This phenomenon appears as well in other languages.

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