

# Language transparency in Functional Discourse Grammar: The case of Quechua\*

Magaly Grández Ávila  
University of Amsterdam

*Despite presenting remarkable transparent features in its grammar, which translates, for instance, into the absence of opaque morphosyntactic operations, such as tense copying, grammatical gender and agreement, Quechua could not be regarded as a representative case of language transparency. As a matter of fact, it presents features which, within the context of Functional Discourse Grammar, can be regarded as non-transparent, as, for example, the presence of apposition and cross-reference and the existence of morphosyntactic operations, such as raising and morphosyntactic alignment. Interestingly, evidence is found in this study with respect to the crucial role of the phenomenon of grammaticalization in the development of language opaqueness.*

## 1 Introduction

This research attempts to be a contribution to the study of language transparency in Functional Discourse Grammar (FDG). On the basis of the properties listed and explained in the introductory chapter, expected to characterize a transparent grammar, this study aims to account for the extent to which the Quechuan language can be regarded as transparent.

This paper is organized in the following way: in the next section, I present a brief description of the language under study. In the third and fourth section, I will analyse the degrees of transparency in the grammar of Quechua between levels of representation, i.e. the Interpersonal and Representational level, the Representational and Morphosyntactic level and the Morphosyntactic and Phonological level; and within levels of representation, i.e. at the Morphosyntactic and at the Phonological Levels. In the last section, I present the final conclusions and some questions for further research.

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\*I would like to thank Kees Hengeveld and Sterre Leufkens for their valuable comments and input on earlier versions of this paper. Any faults this paper may contain are of course my own.

## 2 The Quechua language

The name Quechua alludes to a group of closely related languages spoken in six different South-American countries: Peru, Ecuador, Bolivia, Argentina, Colombia and Chile. The variety of Quechua whose grammar serves as main reference in this study is Huallaga Quechua (Weber 1989), which belongs to the central dialectal group (central Andean region of Peru), classified as a Quechua I dialect (Torero 1964). Taking into consideration that languages within the Quechuan family share most grammatical features, though lexically they may vary to a great extent, data from other Quechua varieties will be also used in order to support the analysis when necessary.

Typologically speaking, Quechua is dominantly an agglutinating language with respect to its morphology. Concerning the basic order of major constituents, Quechua is a SOV language according to Greenberg's typology (1963). If we follow Dixon (1979) and Comrie (1978)'s three-way distinction (Subject, Agent and Patient) in the classification of language systems, Quechua constitutes then a nominative/accusative system, where the formal properties that most directly characterize this system in Quechua are those related to case marking and participant reference marking on the verb, as will be explained later when accounting for grammatical relations in this language.

The morphological characterization of Quechua presented previously brings about an important implication concerning its transparency which is relevant to mention and important to bear in mind, even though this notion will be developed in more detail in the next section. According to Hengeveld and Mackenzie (2008:301), a language which is agglutinating is semantically transparent in the sense that there is ideally a one-to one relation between a morpheme at the Morphosyntactic Level and a unit of meaning at the Representational and Interpersonal level, as shown in the following Quechua examples (Weber 1989:10):

- (1) Mucha-ma-nki.  
Kiss-1.SG.OBJ-2.SG.SBJ  
'You kiss me.'
- (2) Mucha-ma-shka-nki.  
Kiss-1.SG.OBJ-PST-2.SG.SBJ  
'You kissed me.'

As one can notice from the examples above, Quechua is a language whose morphosyntax relies heavily on agglutination by suffixation and on cliticization.

Word formation processes by suffixing are very productive, as in (3) below (Weber 1989: 9):

- (3) Uma-sapa-ya-kaaku-chi-ma:-na-n-paq.  
 Head-big-become-COMPL-CAUS-3.SG.SBJ>1.SG.OBJ-SUB-3.SG-PURP  
 ‘in order to cause me to become completely big-headed.’

What is more, suffixes follow a relative order, e.g. root/stem– object marker– tense marker/subordinator– subject marker, as in (2) above, and can be distinguished between those applying strictly to nouns, to verbs or both nouns and verbs.

After this brief description, the following section deals with the notion of transparency at the different levels of representation of FDG in the Quechua language.

### **3 Accounting for degrees of transparency between levels**

A number of properties between the Interpersonal and Representational levels, the Representational and Morphosyntactic levels and the Morphosyntactic and Phonological levels are expected for a language to be considered transparent.

#### **3.1 *At the Interpersonal-Representational levels***

The following properties between the Interpersonal-Representational levels are expected for Quechua to be considered a transparent language:

##### *3.1.1 No cross-reference*

According to Hengeveld and Mackenzie (2008:350), cross-reference occurs when person marking on the verb is capable of referring by itself. Cross-referencing pronominal argument affixes can therefore be treated as the bound expression of Referential Subacts (Interpersonal Level). The lack of transparency, i.e. the absence of an ideally one-to-one mapping from level to level, arises due to the possibility for cross-referential markers to be expanded further by a lexically realized argument, leading to the occurrence of two Referential Subacts at the Interpersonal Level referring to a single argument at the Representational Level. Quechua obligatorily cross-references the arguments that are assigned the semantic function of Actor or the syntactic function of Subject. It may also cross-reference the Undergoer argument. As in (4),



“I see the ball of the boy, of the big one”

- (7) Wamra-pa pelota-n=ta                      rika- :              hatun=ta  
 Boy-GEN ball-3.POSS=ACC                  see-1.SG            big=ACC  
 ‘I see the big ball of the boy’  
 “I see the ball of the boy, the big one”

The lack of a one-to-one correspondence between pragmatic and semantic units explains why appositions are not expected in transparent languages. Quechua is then not transparent in this respect.

### *3.1.3 No limitations on which semantic units can be chosen as predicates*

In languages like English, there are certain restrictions concerning the semantic units that can be chosen as main predicates in a predication, which in this case must necessarily correspond to a verbal lexeme. As explained by Hengeveld and Mackenzie (2008: 392), in the absence of a verbal element at the Interpersonal Level or Representational Level in the realization of an Ascriptive Subact, English requires the insertion of a support-verb, such as the verbal copula ‘be’, at the Morphosyntactic Level, which will serve as the carrier of TMA distinctions strictly assigned to verbs in this language. The insertion of a support-verb at the Morphosyntactic Level to mitigate the mismatches at the higher levels of representation goes against the notion of transparency, understood in terms of a one-to-one mapping between units at all levels.

Following Weber (1989), Quechua characterizes for having two major open lexical classes, namely verbs and nouns, and a large open class of noun-adjectives<sup>1</sup>. As in English, verbal lexemes are generally used as main predicates within a predication frame. When other classes of lexemes rather than verbs are used predicatively then the insertion of a verbal copula at the Morphosyntactic Level is necessary, as the following examples show (Weber 1989: 24):

- (8) Ollko ka-ra-n  
 Male be-PST-3SG.  
 ‘It was (a) male’

- (9) Puka ka-nqa  
 Red be-FUT.3SG

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<sup>1</sup> Weber does not consider adjectives as a separate lexical class in Quechua. However, it appears justifiable, as I argue in section 3.3.3, to account for adjectives as a lexical class in its own right.

‘It will be red.’

- (10) Wasi           alli   ka-yka-n  
 House       good be-IMPF-3.SG  
 ‘The house is (still) good’

However, the insertion of the copula does not occur in cases in which an adjective/noun is used as a predicate in the present tense and third person singular, and further TMA specifications are unnecessary<sup>2</sup>. In these cases then, nouns and adjectives can directly be used as main predicates without the insertion of further operations at the Morphosyntactic Level, as shown in (11) and (12) below:

- (11) Wasi-n                   puka  
 House-3.SG.POSS red  
 ‘His house is red.’ (Weber 1989: 14)

- (12) Chay wasi   ñuka-paj=mi  
 DEM house 1-POSS=FOC  
 ‘That house is mine’  
 “That house is of me.” (Cole 1982:115, Imbabura Quechua)

Except for these cases, Quechua cannot be said to be fully transparent with respect to the type of semantic units that can be chosen as predicates, as these are generally restricted to verbal lexemes.

### 3.2 At the Representational-Morphosyntactic levels

The following properties between the Representational-Morphosyntactic levels are expected for Quechua to be considered a transparent language:

#### 3.2.1 No grammatical relations

Grammatical relations are formalized in FDG as syntactic functions that pertain to the Morphosyntactic Level. Syntactic functions are relevant in those cases in which the formal properties of linguistic units cannot be reduced to the pragmatic and semantic categories and functions underlying them. As one can

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<sup>2</sup> Notice, however, that when used predicatively, nouns and adjectives do not behave exactly as prototypical verbal predicates in that they are not assigned morphosyntactic specifications such as person marking which is, as mentioned in section 3.1.1, obligatory in verbs.

see, this neutralization of semantic and pragmatic distinctions goes against a transparent one-to-one mapping between units at all levels, or at least between units from a higher level (either pragmatic or semantic) to units from the lower levels (morphosyntactic and phonological), which would be expected considering the hierarchical ordering followed in a functional grammar for the formulation and encoding of linguistic forms. Grammatical relations are then not expected in transparent languages, in other words, alignment, i.e. the way in which non-hierarchically related pragmatic and semantic units map onto morphosyntactic ones, is expected to be sensitive to either pragmatic or semantic aspects, but not morphosyntactic ones, in a transparent grammar.

As for morphosyntactic alignment, it is sensitive to the syntactic functions assigned to morphosyntactic constituents, which, depending on their neutralized behaviour, may be either Subject or Object, and/or to the complexity of such constituents.

Quechua does bear morphosyntactic alignment, in which case the grammatical function Subject is relevant to account for the neutralized behaviour of morphosyntactic constituents. As explained by Hengeveld and Mackenzie (2008:325), the syntactic function Subject is relevant when there is neutralization between the Actor/Undergoer argument of one-place predication frames and, as far as Nominative-Accusative languages concern, the Actor argument of two-place predication frames, as illustrated in the following examples (Weber, 1989:176):

(13) Hwan-Ø aywa-n  
John.NOM go-3SG.  
'John goes'

(14) Hwan-Ø puñu-n  
John.NOM sleep-3SG.  
'John sleeps'

(15) Hwan-Ø Pedro=ta maqa-n  
John.NOM Pedro=ACC hit-3SG.  
'John hits Pedro'

The relevance of the grammatical relation Subject and its neutralizing behaviour gets manifested in Quechua by means of case marking on free noun phrases, which, as shown in the examples above, corresponds to a (zero) nominative case marker. Note, however, that another case marker, *-ta*, serves to mark the Undergoer argument in two-place predication frames such as (6), reflecting then a direct semantic opposition that pertains to the Representational Level. The

neutralizing behaviour of the grammatical function of Subject gets also manifested in person marking on verbs, in which case the Actor and Undergoer arguments are cross-referenced on the verb by means of cross-referential markers. In one-place predication frames, the cross-referencing pronominal markers are not affected by the semantic function of the argument involved, as can be seen in (13) and (14) above, but, in two-place predication frames, there is a distinctive form to mark the Undergoer argument, as the examples below show (Weber 1989:176,180), which can be left out in cases where it is conveyed by lexical or pragmatic units, as in (15) above.

- (16) Puñu-:  
 sleep-1SG.  
 ‘I sleep’
- (17) Aywa-:  
 Go-1SG.  
 ‘I go’
- (18) Maqa-ma-ra-n  
 hit-1SG.OBJ-PST-3SG.SBJ  
 ‘He hit me’

As pointed out by Hengeveld and Mackenzie (2008:325), the relevance of the syntactic function Subject does not only follow from its neutralizing behaviour, but it may also be manifested by special operations leading to differential assignment of the Subject function to arguments with different semantic functions, as is the case with passivization in Nominative-Accusative languages, in which the non-Actor argument of a transitive predicate is made into the Subject. According to Weber (1989), Quechua does bear passivization, in which case a non-Actor argument is given the syntactic function of Subject receiving properties relevant to this function, such as zero nominative case marker, and triggering further special operations on the verb, as illustrated in the next examples:

- (19) Noqa=ta    rika-ma-n  
 I=ACC        see-1SG.OBJ-3SG.SBJ  
 ‘He sees me’
- (20) Noqa-Ø    rika-sha    ka-:  
 I-NOM        see-PTCP    be-1SG  
 ‘I am seen.’

As shown in (20), the differential treatment that characterizes passive clauses in Quechua is accomplished either analytically, by the addition of a participle marker, *-sha*, on the main verb followed by the verbal copula *ka-* ‘be’, or morphologically, by means of a passive marker, *-ka*, or durative marker, *-ra*, on the verb, as shown below (Weber 1989:178)<sup>3</sup>:

- (21) Rika-n  
See-3.SG.SBJ>3.SG.OBJ  
‘He sees it’.
- (22) Rika-ka-n  
See-PASS-3.SG  
‘It is seen.’
- (23) Pampa-n  
Bury-3.SG.SBJ>3.SG.OBJ  
‘He buries it’
- (24) Pampa-ra-n  
Bury-DUR-3SG.  
‘It is buried.’

A question that still remains to be answered is if the grammar of this language is sensitive too to the syntactic function Object, that is if it is necessary to postulate an Object function for Quechua. As explained by Hengeveld and Mackenzie (2008:326), the grammatical function of Object becomes relevant when the opposition between the Undergoer argument in a two-place predication and the Recipient argument in a two or three-place predication is neutralized, in which

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<sup>3</sup> According to Weber (1989), the Actor argument of a passive clause may be demoted to an oblique role, in which case it is followed by an ablative case marker, as in the example below:

Yanapa-sha ka-nqa chay runa qam=pita.  
Help-PTCP be-3.FUT that man you-ABL  
‘The man will be helped by you.’

However, it is more common to keep this argument unexpressed in spontaneous speech. What is more, Weber acknowledges that when asked, speakers do not always agree on the type of case marker to be used to mark the oblique role of the Actor argument, which may suggest that this language does not really allow for the Actor argument of a passive clause to be indicated. Further investigation is needed to find out if the passive-like phenomena Weber explains can be taken as evidence to account for the relevance of a Subject function in Quechua, as meant in FDG, when referring, for instance, to passivization in English as evidence of the relevance of the syntactic function Subject in this language.

case they may receive the same case marker and/or trigger the same agreement patterns on the verb. On the basis of the following example (Weber 1989:180), there seems to be no need to account for an Object function in Quechua:

- (25) Chawra warmi-n=man            karta=ta    apa-chi-mu-sha.  
 So      wife-3.POSS=GOAL      letter=ACC   take-CAUS-afar-3.PFV  
 ‘So he sent a letter to his wife.’

There is no neutralization involved in (25), that is the Undergoer, *karta* ‘letter’, and the Recipient, *warmi* ‘wife’, behave differently bearing each of them a distinctive case marker. However, it is possible to assign the Object function to the Recipient argument, with the result known as ‘dative shift’<sup>4</sup> shown in (26):

- (26) Hwan=ta    kuchi=ta    ranti-ku-sha  
 John=OBJ    pig=OBJ    sell-REFL-3.PFV  
 ‘He sold John a/the pig.’ (Weber 1998:11)

The neutralizing behaviour of the Object function manifests itself in the use of the same case marking for both the Undergoer and Recipient argument, but also by triggering the same person marking on verbs, as illustrated in the examples below (Weber 1989: 180):

- (27) Pay-Ø            ñoqa=ta    maqa-ma-ra-n  
 He.NOM    I=OBJ      hit-1SG.OBJ-PST-3SG.SBJ  
 ‘He hits me’.

- (28) Pay-Ø            qam=ta    qu-ma-ra-n  
 He-NOM    you=OBJ    give-1SG.OBJ-PST-3SG.SBJ  
 ‘He gave you to me.’

As these examples show, the person marker *ma* is assigned the Object function, cross-referencing either with an Undergoer (27) or Recipient argument (28).

The phenomenon of ‘dative shift’ in Quechua justifies the relevance of the Object function in its grammar. In this sense, Quechua is comparable to English, which also allows for dative shift in three-place predication frames. In Quechua, however, the neutralizing behaviour of the Object function may also occur in two-place predication frames between the Undergoer argument and a Locative

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<sup>4</sup> A dative shift construction is one in which the Recipient lacks distinguishing morphosyntactic marking, such as prepositional marking, and is treated instead as an Undergoer, morphosyntactically speaking.

argument (understood in its broader sense). This neutralization gets also manifested by non-differential case marking, as in (30) and (32) below (Weber, 1989:182,197,190):

- (29) Pillku=man            aywa-shaq  
 Pillku=GOAL            go-FUT.1SG  
 ‘I will go to Pillku.’
- (30) Pillku=ta    aywa-shka-:  
 Pillku=OBJ    go-PFV-1SG.SBJ  
 ‘I went to Pillku’
- (31) Biyashi=pita            kuti-ku-mu-sha  
 trip=ABL                    return-REFL-afar-3.PFV  
 ‘He returned from the trip.’
- (32) Biyashi=ta    aywa-yka-sha-n-pita                    kuti-ku-mu-sha  
 trip=OBJ    go-IMPF-SUB-2.POSS-ABL            return-REFL-afar-3.PFV  
 pullan=pita  
 half-ABL  
 ‘He returned from the trip on which he had gone halfway through’

It is important to mention that the neutralizing behaviour of the Object function applies, according to Weber (1989), to the central varieties of Quechua, where the assignment of the syntactic function Object to Locative arguments, including further distinctions such as Recipient, spatial Goal and Benefactive, appears to be an outcome of grammaticalization that can be subjected to a scale, as the process has not (yet) led to a fully-neutralized state between Undergoer and Locative oppositions, which are still relevant and rich in the southern varieties of the Quechuan family.

On the basis of the previous explanation and examples, we can conclude that Quechua is a language in which the syntactic function Subject becomes relevant to describe the neutralized behaviour of morphosyntactic constituents that cannot be reduced to the pragmatic or semantic functions underlying them. Quechua does also bear a Directive-Indirective alignment (Hengeveld and Mackenzie, 2008:327), which means that Undergoers and Recipients behave distinctively, leading to the direct manifestation of semantic oppositions onto morphosyntactic ones. However, the grammar also allows for the assignment of

Object function to Recipient arguments in certain contexts<sup>5</sup>, which appear to be increasing, as far as the central varieties of Quechua concern, as a result of grammaticalization. The relevance of the grammatical relation Subject and, though to a lesser extent, Object in the grammar of this language accounts, as mentioned before, for its lack of transparency in this respect.

### 3.2.2 No discontinuity

In FDG, the notion of continuity is directly linked to the idea of domain integrity, which, together with the notions of iconicity and functional stability, constitutes an important principle that governs the relation between the Morphosyntactic Level and the two input levels, that is the Interpersonal and Representational Level. As explained by Hengeveld and Mackenzie (2008:285), domain integrity refers to the crosslinguistic preference for the units that belong together at the Interpersonal Level and at the Representational Level also to be juxtaposed to one another at the Morphosyntactic Level. In other words, there is a preference for one-to-one relation between the hierarchical structure of the input levels and that of the Morphosyntactic Level. This principle goes then in accordance with the notion of transparency, which guarantees the easy interpretability of linguistic structures. The violation of domain integrity, which leads to discontinuity, is therefore not expected in transparent languages. However, as Hengeveld and Mackenzie (2008) point out, many languages show instances where domain integrity is overridden by other communicative strategies. For instance, the syntactic domain integrity of the Verb Phrase (Vp) is generally violated in English to signal an Interrogative Illocution. Other languages allow relative massive violations of domain integrity, relying on morphological agreement and government to signal interpersonal and representational connectedness. Quechua appears not to be an exception in this respect, as the following examples show (Weber 1989:250):

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<sup>5</sup> In English, for instance, the assignment of Object function to the Recipient argument, that is the neutralization between the grammatical properties of Undergoer and the Recipient, occurs basically in three-place predication frames. There seems to be, however, another condition for this neutralization to take place that is intimately related to the notion of animacy. In cases where the Recipient is inanimate and the Undergoer animate, such neutralized behaviour appears to be very unlikely. Compare, for example:

I sent the children to the museum.

I sent the museum the children. (?)

In Quechua, neutralization of Undergoer/Recipient argument also occurs in three-place predication frames but a question that remains to be answered is if this neutralization is also sensitive to ‘animacy’. The data I have analysed so far does not provide with evidence to corroborate this.

- (33) Hatun        runa=ta        rika- :  
 Big            man=ACC        see-1SG.  
 ‘I see the/a big man’
- (34) Runa=ta    rika-:        hatun=ta  
 Man=ACC    see-1SG     big=ACC  
 ‘I see the/a big man’  
 ‘I see the man, the big one’

In Quechua, modifiers are placed next to their heads, the former generally preceding the latter (33), following, in that way, a principle of integrity, in which case the semantic integrity of heads and modifiers is reflected at the Morphosyntactic Level and translated into syntactic domain integrity. However, morphological agreement may allow the infringement of domain integrity, as shown in (34), where the integrity of the Noun Phrase, (Np), *hatun runa* ‘a/the big man’ (33), has been overridden by assigning each of its constituents accusative marking which allows to place them at any position in the Clause and makes it possible for the Addressee to understand them as one semantic unit, bearing the semantic function Undergoer. Nevertheless, the violation of integrity in (34) should be better understood as an infringement to the general cross-linguistic preference for juxtaposing, morphosyntactically speaking, elements that belong to the same semantic unit to one another, without this necessarily meaning a violation of syntactic integrity. As Hengeveld and Mackenzie (2008:298) point out, there is morphosyntactically no reason to assume that discontinuous constituents, e.g. *runa-ta* ‘man-ACC’ and *hatun-ta* ‘big-ACC’ in (34) above, belong to one particular syntactic unit, e.g. the Np *hatun runa* ‘a/the big man’. As a matter of fact, even when juxtaposition is to be expected at the Morphosyntactic Level due to the organization of the elements involved at the Representational Level, the choice of word order may be determined by other factors pertaining to the Interpersonal Level. In that case, the constituents in (34) carrying accusative marking can be analysed at the Interpersonal Level as two independent Referential Subacts evoking *runa* ‘the man’, *hatun* ‘the big one’, as suggested in the second translation, which are quite directly reflected at the Morphosyntactic Level as two independent Noun Phrases, though corresponding to one semantic unit at the Representational Level bearing a particular semantic function, Undergoer.

On the basis of the analysis above, we cannot arrive at a categorical conclusion with respect to the transparency of Quechua in relation to the feature in question. One possibility would be to assume that Quechua does present discontinuity, that is, a violation of domain integrity, semantically speaking due to pragmatic reasons, which does not necessarily imply syntactic discontinuity.

### 3.2.3 Lexeme functions and derivational processes not sensitive to nature of input

As explained by Hengeveld and Mackenzie (2008:225), languages may have specialized classes of lexemes to fulfil every single functional specification that result from distinctions made at the higher levels of representation: Interpersonal Level (Referential Subacts versus Ascriptive Subacts) and Representational Level (heads versus modifiers). For instance, to fulfil the function of head within an Ascriptive Subact, Dutch has available four different classes of lexemes, namely verbs, nouns, adjectives and adverbs (Hengeveld and Mackenzie 2008: 220-221). However, whereas only verbs can directly be used predicatively, the other three classes of lexeme will require the insertion of a verbal copula at the Morphosyntactic level to be suitable in the grammatical environment in which they occur. From this, we can conclude that in Dutch, the function of a lexeme is sensitive to nature of input, in the sense that it has specialized lexeme classes to fulfil a certain function; otherwise further operations would be required at the Morphosyntactic level to adapt a lexeme inserted into an underlying representational slot it was not meant to occupy. The opposite case is found in languages with a flexible lexeme class such as Warao (Romero-Figueroa 1997; cited in Hengeveld and Mackenzie 2008: 225), in which the same lexical item may be used as the head within a Referential Subact, as a modifier within a Referential Subact or as a modifier within an Ascriptive Subact. In this language, only verbal lexemes are distinguished from the rest as they are specialized to function as head within an Ascriptive Subact. From this, we can also conclude that the more flexible the language is with respect to the class of lexemes that can be used to fulfil a certain function, that is the less sensitive lexeme functions are to the nature of input, the more transparent it is, as there would be no need for further adaptations at the Morphosyntactic Level that would affect, after all, the ideally one-to-one correspondence between units at all levels of representation.

Quechua bears certain degree of flexibility with respect to the lexical item that can be chosen to fulfil a relevant function, though, as will be shown, such flexibility is restricted. As mentioned in 3.1.3, for a lexical item to fulfil the function of head within an Ascriptive Subact, that is for a lexeme to be used as main predicate, it should belong to the class of verbal lexemes, otherwise copula insertion will be required at the Morphosyntactic Level. Here is precisely where the restricted flexibility of this language arises. As may be recalled, in contexts where nouns and adjectives are used predicatively in the third person and present tense, no further adaptations are needed at the Morphosyntactic Level, so then they can be used as main verbal predicates. The specialization of verbal

lexemes to fulfil this relevant function without further morphosyntactic adaptations is evidence to distinguish them as a particular lexical class in Quechua. In the same way, it is relevant to account for a class of nouns in this language due to their distinguishing function as heads within Referential Subacts. For verbal lexemes to fulfil this function (heads of Referential Subacts), further adaptations at the Morphosyntactic Level would be required, namely those related to derivational processes. This explains why lexical functions are not expected to be sensitive to nature of input in transparent languages. If they were, then that would imply the introduction of further specifications/adaptations at the Morphosyntactic Level with no interpersonal or representational counterparts.

A relevant question to ask at this point is if apart from verbs and nouns it is justifiable to account for adjectives and adverbs as specialized lexical classes in Quechua, that is classes with a distinguishing lexical function. According to Weber (1989), neither adjectives nor adverbs can be considered as separate lexical classes in this language. He explains that adjectives may behave as nouns, morphosyntactically speaking, as they can be used as heads of a nominal phrase and carry, accordingly, markers that pertain to nominal lexemes, namely case marking (36). Besides, there is no need to make a distinction between nouns and adjectives, as there are a number of nouns that may behave as modifiers without undergoing any morphosyntactic adaptation (37). The following examples illustrate what have just been said:

(35) Rumi=ta rika-:  
Stone=ACC see.1SG  
'I see a/the stone'

(36) Hatun=ta rika-:  
Big=ACC see.1SG  
'I see a/the big (one)'

(37) Rumi wasi  
Stone house  
'Stony house'

(38) Hatun wasi  
Big house  
'big house'

Weber classifies those modifiers that semantically behave like adjectives but morphosyntactically like nouns as a subclass of noun/adjective lexemes within

the major class of nouns, his main criterion for this classification being a morphosyntactic rather than a semantic one. However, if we take into consideration both the pragmatic and semantic parameters suggested in FDG to account for functions of lexemes and identify first the relevant functions and then study the way in which lexemes are distributed across these functions, we will be able to identify lexemes classes more consistently, not only on the basis of formal criteria, but also on the basis of criteria that correspond to the levels of representations lexical items pertain, that is the input levels: Interpersonal and Representational Level.

Bearing this in mind, I consider relevant to account for a class of adjectives in Quechua as they generally fulfil the function of modifiers within Referential Subacts, without requiring any further morphosyntactic adaptations. What is more, the semantic integration between adjectives, as modifiers, and their corresponding heads, i.e. nouns, gets expressed by means of syntactic integration too in the sense that modifiers generally precede their heads, when present, as explained in section 3.2.2. In (36) above, the adjective is not functioning as the head of a Referential Subact, a function that is generally assigned to nouns, but as a modifier whose head is absent. As Weber himself acknowledges, a construction like this is good provided that the speaker assumes the hearer knows who/what is being talked about (1998:249). From the perspective of FDG, there would be no reason to assume that the modifier in (36) is being used in that context as a lexical head; in other words, the nominal use of adjectives should not be taken as evidence to consider them as a subclass of nominal lexemes rather than a distinct lexical class.

There is, however, certain flexibility with respect to the class of lexemes that can fulfil the function of modifiers within a Referential Subact. Apart from adjectives, nouns may also be used as modifiers, as in (37) above, without this necessarily meaning that a distinction between nouns and adjectives is irrelevant, especially if we take into account that only a particular subset of nouns may be subjected to such flexibility, namely those whose semantic properties can be somehow ascribed to the entity that is being referred. It must be also noted that even in cases where nouns are used as modifiers within a Referential Subact, there is a syntactic constraint that apply to these nouns so that they can appropriately fulfil this function, that is they must precede the head they modify, otherwise it can result into an wrong reading in which the noun, instead of being interpreted as a modifier, is understood as the head of the Referential Subact. Such restriction, introduced at the Morphosyntactic Level, does not apply to lexical adjectives, which, even though they are generally used

in pronominal position, can also follow their heads without this leading to ambiguity<sup>6</sup>.

As for what adverbs concern, I agree with Weber that there is no reason to account for them as a separate class of lexemes in Quechua. To fulfil the function of modifiers within an Ascriptive Subact, i.e. Manner adverbs, verbs, nouns and adjectives must generally undergo further adaptations at the Morphosyntactic Level, namely by derivation, in order to be suitable in the grammatical environment in which they occur. Interestingly, some adverbs, such as *sumaq* ‘very’, ‘well’, and *fiyupa* ‘very’, ‘hard’, appear to have undergone grammaticalization and so can be regarded as adverbs in their own right, though they are part of a very limited group of lexicalised forms.

In conclusion, Quechua cannot be said to be transparent with respect to this feature. Despite its flexibility in certain contexts with respect to the kind of lexical unit that can be chosen to fulfil a given function, there are clearly specialized lexemes that bear a distinguishing function, which demand further morphological adaptations in cases where lexical items, generally belonging to other classes, are used to fulfil this function. As mentioned before, such adaptations can, for instance, be fulfilled by means of derivational processes.

### 3.2.4 *Function marking not sensitive to nature of input*

Function marking is basically used here to refer to the way nucleus-dependent relations, that is those characterizing the relationship between a predicate and its argument(s), whether that predicate be verbal, nominal or adpositional, get expressed at the Morphosyntactic Level. The expression of nucleus-dependent relations at the Morphosyntactic Level may appear on the nucleus, on its dependents, on both or on neither. According to Nichols (1986), languages tend

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<sup>6</sup> Another restriction, pointed out for other varieties of Quechua such as Imbabura (Cole, 1985) and Ancashino (Cerron-Palomino, 1987), that may be important to consider in order to distinguish adjectives from nouns, and their semantic-syntactic repercussions, is that generally a single noun can be used as a modifier within a Referential Subact, whereas multiple adjectives can behave as modifiers of a nominal head. Cases in which two nouns modify a head noun should be better understood as a compound modifier, as suggested by Cerrón-Palomino (1987:300) in the following example from Ancashino Quechua:

Hara chacra rumi  
Corn field stone  
‘Cornfield stone’

Beck (2002) suggests that these compound nominal modifiers appear to be uncommon or otherwise highly lexicalised in Quechua.

to use the first or second type of marking, that is they are predominantly either head-marking<sup>7</sup> or dependent-marking.

In a transparent grammar, function marking, whether predominantly of the nucleus or dependent type, is not expected to be sensitive to the nature of the linguistic unit that serves as input, as it would mean the introduction of further specifications/operations at the Morphosyntactic Level that would affect the ideally one-to-one relation between units at all levels of representation.

According to Nichols (1986:72), Huallaga Quechua can be regarded as a double-marking language as it marks several of its constructions twice, on both the head and the dependent, as shown in the following examples:

(39) Pay-Ø      ñoqa=ta      maqa-ma-ra-n  
 He.NOM      I=ACC      hit-1SG.OBJ-PST-3SG.SBJ  
 ‘He hits me’. (Weber 1989: 180)

(40) Hwan-pa              uma-n              hatun  
 John-3.GEN              head-3.POSS              big  
 ‘John’s head is big.’ (Weber 1989: 57)

(41) Hwan-pa      hana-n=chaw  
 John-GEN      above-3.POSS=LOC  
 ‘Above John.’ (Nichols 1986: 72)

In cases like (39), there is no need for the arguments cross-referenced on the verbal predicate to be further expanded by means of pronouns, but in cases in which arguments need to be expressed they will always be subjected to dependent-marking processes, namely by means of case markers as can be seen in (39), which should be better referred to as clitics due to their behaviour as bound morphemes, phonologically attached to a host, which are not sensitive to the nature of the linguistic unit they mark, which may well be a single form (39), a phrase or a whole clause, as illustrated in the examples below:

(42) Maqa-y=ta              muna-shunki  
 hit-INF=ACC              want-3SG.>2.SG.OBJ  
 ‘He wants to hit you.’

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<sup>7</sup> In FDG, we shall refer to languages as nucleus-marking rather than head-marking, as a distinction is made between nucleus-dependent relations and head-modifiers relations. In this section, we are dealing basically with the former type of relations.

- (43) Rika-ra:           Hwan Tumas=ta   maqa-yka-q=ta  
 see-PST-1.SG       John Tom=ACC   hit-IMPF-SUB-ACC  
 ‘I saw John hitting Tom.’

These examples clearly show the transparency of Quechua with respect to function marking. However, double-marking in itself as reflected in (39), (40) and (41) above could be argued to lack of transparency in the sense that the semantic function which expresses the relation between the nucleus and its dependents at the Representational Level is morphosyntactically marked twice. As mentioned before, there is no need for the dependent arguments in (39) to be further expanded by means of pronouns, therefore function marking on the verbal nucleus by means of cross-referential pronominal markers may be sufficient<sup>8</sup>. However, in nominal phrases such as (40), function marking needs to be expressed on both the head noun and its dependents, which leads in this case to double possessive marking, expressed by means of a genitive case marker and a possessive person marker both alluding to the relation between possessee and possessor, whether the possessee is alienable or inalienable. The same holds for adpositional phrases such as (41), in which case both the head and the dependent are marked, leading to double possessive marking, as long as the dependent argument is human, otherwise only the head is marked, as shown below (Nichols 1986: 73):

- (44) wasi           hana-n=chaw  
 house           above-3.POSS=LOC  
 ‘Above the house.’

Whether or not the relation between nucleus and dependents is morphosyntactically marked twice, and whether or not function marking is sensitive to semantic aspects such as that of animacy, cases such as those in (40), (41) and (44) cannot be regarded as lacking of transparency in terms of function marking as it clearly obeys specifications made at the Representational Level. Function marking in Quechua is semantic in nature and so is not sensitive to the (morphosyntactic) nature of the linguistic units that serve as input. Thus, this language can be considered as transparent with respect to function marking.

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<sup>8</sup> It is also possible to mark only the argument bearing the function of Subject on the nucleus, whereas the one bearing the function of Object gets overtly realized on an independent form, instead of being cross-referenced on the verb, carrying dependency marking,

### 3.3 At the Morphosyntactic-Phonological levels

The following properties between the Morphosyntactic-Phonological levels are expected for a language to be considered as transparent:

#### 3.3.1 *Phonological phrasing and morphosyntactic phrasing run in parallel*

In keeping with the one-to-one correspondence between units at all levels of representation that characterizes language transparency, it is expected that the morphosyntactic encoding of the input formulated at the higher levels runs in parallel with its corresponding phonological encoding, which provides a representation that serves as input to the Output Component, responsible for articulation. However, as stated by Hengeveld and Mackenzie (2008:427), the relation between these two encoding levels is only of partial parallelism, especially if we consider that the phonological representation of a given utterance may be influenced by many other factors, rather than purely morphosyntactic ones.

Unfortunately, the descriptions provided in grammars of the different varieties of Quechua, including the variety in question on this paper, do not provide with an exhaustive characterization of its prosodic phonological features. As stated by Cerron-Palomino (1987: 128), suprasegmental features in special, such as those related to intonation, accentuation and rhyme, have been the least studied phenomena in the phonology of Quechua and so they definitely deserve further investigation. The lack of relevant data in this respect does not allow for an exhaustive analysis of phonological phrasing, and its corresponding parallelism with morphosyntactic phrasing, in this language. As most accounts on Quechua phonology are related to segmental features, especially to stress patterns, which are regarded as the criterial property of Phonological Words, I will refer to them and attempt to account for their relevance with respect to the parallelism between morphosyntactic and phonological encoding.

As explained by Hengeveld and Mackenzie (2008: 443), the correlation between morphosyntactic and phonological words is best in isolating, agglutinating and fusional languages. As an agglutinating language, Quechua does present a good correlation between morphosyntactic and phonological words, with primary stress being placed on the penultimate syllable of the morphosyntactic word, as shown in the following example (Weber 1989:55), in which primary stress falls on the syllable /ku/:

- (45) wasi-n-kuna  
 house-3.POSS-PL  
 ‘his/her houses’

According to Weber (1989:457), this stress pattern is not always followed, especially in cases in which stress is used for emphasis, in which case it usually falls in the last syllable. The violation of this rule appears, however, to have a pragmatic trigger, therefore it is justifiable to account for the Phonological Word as a relevant category in which stress assignment takes place.

Hengeveld and Mackenzie (2008:446) also explain that the correlation between morphosyntactic and phonological words becomes problematic when clitics are at stake. Clitics are morphemes generally treated as words at the Morphosyntactic Level and are represented as such according to the templates relevant to that level (for further explanation see 4.1.5 below). At the Phonological Level, however, a clitic is treated as part of the Phonological Word where it operates, which inevitably affects the parallelism between morphosyntactic and phonological phrasing. In the grammar of Quechua, the use of Clause and Phrase-layer clitics is a prominent feature, and so lack of correspondence between morphosyntactic and phonological phrasing, where clitics are involved, is expected, as shown in the following example (Weber 1989:470):

- (46) wasi-n=chaw  
house-3.POSS=LOC  
'in his house'

This structure constitutes an Adposition Phrase (Adp), integrated by morphosyntactic words, namely a Nominal Word (Nw) and a Grammatical Word (Gw), and is represented as such at the Morphosyntactic Level:

- (47) ML: (Adp<sub>i</sub>: [(Np<sub>i</sub>: [(Nw<sub>i</sub>: [(Ns<sub>i</sub>: / wasi/ (Ns<sub>i</sub>)) (Aff<sub>i</sub>: /n/ (Aff<sub>i</sub>))](Nw<sub>i</sub>))] (Np<sub>i</sub>)) (Gw<sub>i</sub>: /chɔ/(Gw<sub>i</sub>))] (Adp<sub>i</sub>))

The locative marker *chaw* is represented as a Grammatical Word (Gw) within the Adposition Phrase (Adp). At the Phonological Level, however, this belongs to a single Phonological Word (PW), which is, in accordance to a general rule for Phonological Words in Quechua, stressed on the penultimate syllable, as shown in the following phonological representation:

- (48) (PW<sub>i</sub>: [/wa<sup>1</sup> sinchɔ/]) (PW<sub>i</sub>)

The lack of correspondence between morphosyntactic and phonological phrasing in this example shows a partial parallelism between these two encoding levels. Thus, Quechua can be regarded as partly transparent in this respect.

### 3.3.2 Phonological weight does not influence morphosyntactic placement

In an ideal transparent language, neither morphosyntactic nor phonological factors are expected to determine the ordering of clause constituents. On the contrary, alignment is expected to reflect the organization of the higher levels: the Interpersonal and the Representational Level, which would go in accordance with the ideally one-to-one correspondence between processes of formulation and encoding operations.

In Quechua, the ordering of constituents may obey pragmatic factors, though in neutral contexts, alignment is generally the result of semantic and syntactic function assignment. As mentioned before, Quechua has a syntactic function Subject, which tends to occupy a clause-initial position. The placement of U and R arguments appear not to be attributable to syntactic factors, but semantic ones, as this is generally the Undergoer the argument that precedes the predicate, whereas the Recipient tends to precede the Undergoer. Thus, whether determined by syntactic or semantic factors, the placement of constituents in Quechua normally corresponds to that of a predicate-final language. However, when constituents are phonologically heavy, they can be placed after the predicate, as is commonly the case of sensory verb complements such as the one in (49) which can be shifted to the right as illustrated in (50):

- (49) Maria [noqa Pablu-pa                    mishi-n=ta                    qara-yka-q=ta]  
 Mary I      Paul-GEN                    cat-3.POSS=OBJ      feed-IMPF-SUB=OBJ  
 rika-ra-n.  
 see-PST.3.SG  
 ‘Mary saw me feeding Paul’s cat.’

- (50) Maria noqa=ta      rika-ma-ra-n                    [Pablu-pa      mishi-n=ta  
 Mary I=OBJ      see-1.SG.OBJ-PST.3.SG      Paul-GEN      cat-3.POSS=OBJ  
 qara-yka-q=ta].  
 feed-IMPF-SUB=OBJ  
 ‘Mary saw me feeding Paul’s cat.’ (Weber, 1989: 290)

In the same way, nominal modifiers, which are normally placed before the nominal head, may be placed Clause-finally due to their being phonologically heavy. This is what generally occurs with relative clauses in complex constructions such as that in (51) which appears in (52) in clause-final position:

- (51) Maria kañi-ma-sha-n                    allqu-ta                    qara-y=ta  
 Mary bit-1.SG.OBJ-SUB-3.POSS                    dog-OBJ                    feed-INF=OBJ

qalla-ri-na-:=ta                    muna-n.  
 begin-SUB-1.POSS=OBJ    want-3.SG  
 ‘Mary wants me to begin to feed the dog that bit me.’

- (52) Maria qalla-ri-na-:=ta                    muna-n            allqu=ta            qara-y=ta  
 Mary begin-SUB-1POSS=OBJ    want-3.SG    dog=OBJ            feed-INF=OBJ  
 kañi-ma-sha-n=ta.  
 bit-1.SG.OBJ-SUB-3.POSS=OBJ  
 ‘Mary wants me to begin to feed the dog that bit me.’ (Weber, 1989:282)

Quechua cannot be regarded as transparent with respect to the morphosyntactic organization of Clause constituents, as this may not only be determined by pragmatic or semantic factors, but also by morphosyntactic or phonological ones.

#### 4 Accounting for degrees of transparency within levels

A number of properties at the Morphosyntactic Level and within the Phonological Level are expected for a language to be considered transparent.

##### 4.1 At the Morphosyntactic Level

The following properties within the Morphosyntactic Level are expected for Quechua to be considered a transparent language:

###### 4.1.1 *No expletive elements*

Expletive elements are introduced at the Morphosyntactic Level in situations in which no interpersonal or representational material, necessary for the formation of an appropriate structure, is inserted in a certain slot. Expletive forms may replace an argument or a predicate as in the following English examples:

(53) It is raining

(54) There is beer without alcohol                    (Hengeveld & Mackenzie 2008: 347)

In (53), the expletive pronoun *it* serves as an argument, which is required to fill the obligatory Subject slot in the clause. In (54), the expletive form *there* is inserted in the absence of an Ascriptive Subject to fill in the Subject slot, which at the same time requires the introduction of copula *be* as a support verb in the predicate slot.

According to Weber (1989), in Quechua, the existence or presence of an entity must be asserted by means of the copula verb *ka-*. But, unlike the English dummy verb *be* in (2), *ka-* functions in this case as a lexical verb within a regular one-place predication frame, in which the existence itself is ascribed to that entity by means of the copula, used as a lexical expression, comparable in English to a lexical verb such as ‘exist’, rather than as an expletive element, as shown in (55):

- (55) *tanta ka-n*  
bread be-3.SG  
‘There is bread’  
“Bread exists” (Weber 1989:24)

In this respect, Quechua can be considered to be transparent. With respect to event-descriptions, such as those realized by weather predicates like (53) above, Quechua makes use of a zero-place predication frame which, unlike English, does not require the insertion of an expletive element in the subject slot at the Morphosyntactic Level, as can be seen in (56) and (57) below:

- (56) *Shullay-ya-sha*  
Wet-become-3.PFV  
‘It has become wet.’ (Weber, 1989:30)

- (57) *Tamya-yka-n fiyupami*  
Rain-IMPF-3SG. strongly  
‘It is raining strongly.’ (Weber 1998:529)

Despite the absence of an expletive element in the subject slot, Quechua is not completely transparent in this respect due to the presence of an expletive default third person marking on the verb as in (57), which appears in (56) incorporated in the perfect marker *-sha*.

#### 4.1.2 No tense copying

Tense copying is a mechanism of operator agreement between main and subordinate clauses, whose realization pertains to the Morphosyntactic Level. It occurs when information pertaining to the tense operator of the main Clause is copied to the tense operator of the subordinate clause as a result of a copying rule applying to the grammar of a given language, in which case transparency with respect to the Representational Level, where the nature of the operators is

triggered, results affected. In Quechua, such a copying rule does not apply. Instead, it does have an absolute tense system, expressed in main clauses, and a set of relative tense markers, namely an anterior (ANT), simultaneous (SIM) and posterior (POST) marker, which are restricted to subordinate clauses, as in the examples below. In this respect, Quechua can be considered then to be transparent.

(58) qonqa-shka:            aywa-sha: =ta  
 forget-PST.1SG    go-ANT.1POSS=ACC  
 ‘I forgot I had gone.’ (Weber 1994:107)

(59) qapara-q-ta            wiya-shka:  
 shout-SIM=ACC    hear-PFV.1SG  
 ‘I heard him/her shout.’ (Weber 1994:114)

(60) musya:            aywa-nayki=ta  
 know.1.SG    go-SUB.2POSS=ACC  
 ‘I know that you will go.’ (Weber 1994:102)

#### 4.1.3 *No raising*

The morphosyntactic phenomenon referred to as ‘raising’ involves cases in which a constituent semantically belonging to a subordinate Clause appears as a constituent of a superordinate Clause. As Hengeveld and Mackenzie (2008:368) explain, the triggers for raising may be interpersonal, representational, or morphosyntactic in nature. Whatever the nature of the trigger for this dislocation is, it clearly affects the semantic and syntactic integration of constituents and so the ideally one-to-one mapping between units at all levels expected for a transparent grammar.

According to Weber (1994: 99-121), Quechua does present the phenomenon of raising in which case not only the Subject of the subordinate Clause can raise, but also the Object. Object raising occurs especially with infinitival complement clauses, namely with complement taking predicate such as *muna* ‘want’ and *puyri* ‘be able’, as shown in the following examples (Weber 1994:104):

(61) maqa-ma-y=ta            muna-n  
 hit-1.SG.OBJ-INF=ACC    want-3SG  
 ‘He wants to hit me’

- (62) maqa-y=ta            muna-ma-n  
 hit-INF=ACC            want-1.SG.OBJ>3.SG.SBJ  
 ‘He wants to hit me’

As for Subject raising, it generally occurs with complement of sensorial verbs, in which case the Subject of the subordinate clause raises to the Object position of the superordinate clause, taking the accusative marker *-ta*, used as Object marker in Quechua, as shown in the following examples (Weber 1989:290)

- (63) Hwan-ta    rika-shka-:            Maria=ta    mucha-yka-q=ta  
 John=ACC    see-PFV-1SG            Mary=ACC    kiss-IMPF-SUB=ACC  
 ‘I saw John kissing Mary.’

- (64) Rika-shka-:    Hwan Maria=ta            mucha-yka-q=ta  
 see-PFV-1SG    John Mary=ACC            kiss-IMPF-SUB=ACC  
 ‘I saw John kissing Mary.’

As for the trigger of raising in Quechua, it appears to be semantic in nature, as it applies with a limited number of complement taking predicates, in which case the raised Subject or Object bear accordingly the semantic function of Actor or Undergoer and denote an entity that is actively involved in bringing about the situation denoted by the entire sentence, as Bresnier (1988, cited in Hengeveld and Mackenzie 2008: 370) also suggests for Tuvaluan. Thus, as for what the phenomenon of raising concerns, Quechua cannot be regarded as transparent.

#### 4.1.4 No grammatical gender, declination or conjugation

Morphosyntactic phenomena such as grammatical gender, declination and conjugation involve the application of inflectional operations to lexical roots, e.g. nouns, verbs, adjectives, which are not required by the basic meaning of the concept they express, but rather, by the grammatical environment in which they occur. Such phenomena are generally required in order to create fully formed words, ready to be integrated into discourse. As these morphosyntactic operations cannot be mapped directly onto units from the Interpersonal or Representational Level, they are not expected in transparent languages.

Grammatical gender refers to the grammatical class of the noun, which gets reflected on the behaviour of associated words by means of the morphosyntactic mechanism known as gender agreement. As Hengeveld and Mackenzie (2008:396) explain, gender agreement is automatic and triggered by inherent features of the head noun that cannot be predicted on the basis of its meaning. Quechua does not bear grammatical gender, but it does present a

gender classifier which specifies the sex of the entity being referred to by the noun it modifies forming a compound, as in *warmi dansa* ‘woman dancer’.

As for declination, it refers to inflectional operations on nouns, pronouns and adjectives in order to indicate features such as number, case, gender and possession. Languages may present sets of declined forms according to word patterns, which may result into complex declension systems. For instance, Latin presents a system of five different declension paradigms that distinguish seven different grammatical cases according to number, depending on the ending forms. Quechua does not present a declension system as such. Nouns carry distinctive morphemes in order to indicate number, case and possession, which are not subjected to a morphological paradigm and are agglutinating in nature, which means that they can be mapped directly onto units from the higher levels of representation.

With respect to conjugation, it refers to inflectional operations on verbs, which serve to indicate features such as person, number, gender, tense, aspect, mood and voice. Verbs may be subjected to conjugation paradigms according to its formal patterns, leading to a complex verbal system, as is the case in Romance languages. In Quechua, there is not a conjugation system as such. Verbs carry distinctive morphemes in order to indicate person, number, tense or/and aspect, which are agglutinating in nature, that is they can directly be mapped onto Interpersonal or Representational units. In conclusion, Quechua can be said to bear transparency with respect to the morphosyntactic phenomena in question.

#### *4.1.5 No agreement (but pronominal arguments)*

As explained by Hengeveld and Mackenzie (2008:350), agreement is a mechanism by which information properly pertaining to a single element of the construction under consideration is copied to one or more other elements. Rules of agreement basically operate at the Morphosyntactic Level as they are applied, where relevant, once all slots in a template have been filled by material from the Interpersonal and Representational Level. This explains why such a mechanism is not expected in transparent languages.

Of special interest in this section is the distinction made in FDG between agreement and cross-reference, associated with the expression of participants, which is relevant not only at the Clause layer, but also at the Phrase layer. At the Clause layer, languages may present argument agreement on verbs, which is non-referential but syntactic in nature, as they are strictly the result of copying rules from a target to other associated forms. Subject agreement on verbs, for instance, applies especially in non pro-drop languages such as French and English. Contrarily to agreement, cross-referencing marking is capable of

referring by itself and therefore constitute the bound expression of Referential Subacts. In Quechua, person marking on the verb is cross-referential in nature as it is sufficient by itself and may optionally be expanded by a lexically realized argument (see section 3.1.1 above). The same is true at the Phrase layer, for instance in nominal constructions involving possessions, in which case the optional (pro)nominal possessors are cross-referenced on the possessum by means of suffixation of possessive person markers (see 40 above), which have referential force by themselves and therefore reflect the presence of Referential Subacts.

It is important to mention that neither argument agreement nor operator agreement rules such as those related to gender and number appear to apply in Quechua. In this respect, Quechua can be regarded then as transparent.

#### 4.1.6 *Phrase marking through clitics rather than head marking through affixes*

A clitic is a bound morpheme that constitutes a morphosyntactic word in itself that may function at a phrasal or clausal level, which is phonologically dependent in the sense that it needs to bind (cliticize) to an element, known as host, within the phrase or clause, irrespective of the nature of that element. At the Phrase layer, clitics may fulfil various functions as a result of specifications made at the higher levels. Quechua does present a number of Phrase-layer clitics, which may serve to express semantic functions, as explained in section 3.2.4, but also interpersonal functions such as Topic, in which case the topical marker *-qa* is used to mark information contained in a phrase as the most topical element in discourse, as shown in the following example (Weber 1989: 408):

- (65) Kapas watachaw            huk            kuti            armakun    inteeru  
 Maybe in:a:year            one            time            bathe.3PL    entire  
 kweerpun-ta-qa  
 body.3.POSS=ACC=TOP  
 ‘Maybe they bathe their entire body once a year.’

Contrarily to cliticization, affixation is a morphological operation which is sensitive to nature of input, in the sense that affixes, i.e. morphemes with grammatical content, may only occur in conjunction with a stem of a given class. Languages that present head marking through affixes, instead of phrase marking through clitics, lack transparency in the sense that affixation generally involves the application of morphosyntactic rules and specification that do not bear a pragmatic or semantic counterpart, affecting then the ideally one-to-one mapping between units at all levels of representation. The following example from Jarawara (Dixon 2000, cited in Hengeveld and Mackenzie 2008:307)

illustrates how the nucleus or head of the Noun Phrase is marked by means of affixation of a gender marker, which is determined by the gender of the possessor rather than by the inherent gender of the inalienably possessed noun:

- (66) Manira        man-i  
       Manira        arm-F  
       ‘Manira’s arm.’

In Quechua, phrase marking by means of cliticization, rather than head marking affixation, is a salient feature that also characterizes languages such as Kharia (Leufkens, this issue), which accounts for transparency in their grammars.

#### 4.1.7 *No fusional morphology*

As explained by Hengeveld and Mackenzie (2008: 301), fusional languages are semantically opaque as there is no one-to-one relation between a unit of form and a unit of meaning, as illustrated in the following Spanish example:

- (67) Cant-ó  
       sing-IND.PST.PFV.3SG  
       ‘He/she sang.’

Quechua is a language which does not present a fusional but an agglutinating morphology, which means that there is a one-to-one relation between morphemes at the Morphosyntactic Level and units at the Representational and Interpersonal Levels, as can be noted in the example below, whose representation at each of the levels mentioned before clearly reflects the morphological transparency of this language:

- (68) Rura-ka-n-man=mi  
       do-PASS-3.SG-COND=DRCT<sup>9</sup>  
       Certainly it may/should be done. (Weber 1989: 88)

(69) IL:  $A_i: [(F_i: \text{DECL } (F_i)) (P_i)_s (P_j)_A (C_i: [(T_i)(R_i)](C_i))](A_i)$

(70) RL:  $(\text{drct } p_i: (\text{ep}_i: (\text{cond } e_i: [(f_i [(f_j: \text{rura}_v (f_j))(x_i)_U] (f_i)) (e_i)_U])(\text{ep}_i))(p_i))$

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<sup>9</sup> According to Weber (1989:421), the evidential suffix –mi (DRCT) can be interpreted as both an evidential, to indicate firsthand information, or validational marker, to indicate commitment to the truth of the proposition. At the Representational Level, this evidential fulfils the role of an operator at the layer of the Propositional Content and is represented as ‘drct’, following the convention suggested by Weber.

- (71) ML: (Le<sub>i</sub>: (Cl<sub>i</sub>: (Vp<sub>i</sub>: (Vw<sub>i</sub>: [Vs<sub>i</sub>: rura (Vs<sub>i</sub>)) (Aff<sub>i</sub>: ka (Aff<sub>i</sub>))(Aff<sub>i</sub>:n (Aff<sub>i</sub>))  
(Aff<sub>i</sub>: man (Aff<sub>i</sub>)) (Aff<sub>i</sub>: mi (aff<sub>i</sub>))] (Vw<sub>i</sub>)) (Vp<sub>i</sub>))(Cl<sub>i</sub>))(Le<sub>i</sub>))

However, Quechua does also present certain degree of opaqueness in its morphology, especially with respect to transitional markers. A transition is defined by Weber (1989) as a complex of verbal suffixes that function together to indicate the person of the object and subject, as well as the tense/subordination relationship. In most cases, transitions are agglutinating in nature, which means that the boundaries between suffixes forming a transition are clear-cut and so semantically transparent, but in other cases, especially those involving a third person object, the distinctions between the subject and object person and the tense/subordination relationship is conveyed by means of a single form, as shown in the example below (Weber 1989:79):

- (72) Rika-ra:  
See-PST.1.SG.SBJ>3.SG.OBJ  
'I saw him/her/it.'

- (73) Rika-shaq  
See-1.SG.FUT>3.SG.OBJ  
'I will see him/her/it.'

In the morphology of Quechua, we also find cases of stem alternation in verbs affecting the ideally one-to-one mapping between units of meaning and units of form. Stem alternation is a property of certain verbal roots which derive historically from the combination of a monosyllabic verbal root and a derivational suffix which is normally subjected to morpho-phonemic lowering when followed by certain other suffixes. For example, the final high vowel of the verb *miku-* 'eat', which derives historically from *mi-+ku-*, is lowered to /a/, and so *miku-* becomes *mika-*, when followed by one of a certain group of suffixes which triggers the property of lowering, such as the directional suffix *-mu* 'afar', as shown in (74) below:

- (74) *mikamushun*  
*miku-mu-shun*  
eat-afar-12.IMP  
Let's go eat (over there).' (Weber;1989:29)

Thus, stem alternation in verbs occurs basically because several of the incorporated derivational suffixes, such as *-ku* in *miku-* 'eat', present the

property of lowering in different morphological contexts and carry such property into the verb stem when the verb+suffix becomes one unit.

In conclusion, Quechua can be said to be transparent, though to a certain extent, with respect to the feature of fusion.

## 4.2 At the Phonological Level

The following properties within the Phonological Level are expected for Quechua to be considered a transparent language:

### 4.2.1 *No diphthongization or nasalization*

As stated by Andersen (1972:11), the phenomenon of diphthongisation can be understood in several ways. From a synchronic point of view, it can refer to the process whereby a diphthongised vowel (a diphthong) derives from a single underlying segment (a monophthong) as a result of the application of certain phonological rules. For instance, the alternation of the Spanish phonemes /e/ and /o/ and their corresponding diphthongised forms /je/ and /we/, attested in derivational and inflectional processes whereby the original stress is shifted, has been the reason of a number of studies attempting to account for an underlying phonological rule, which is, undoubtedly, confronted with a number of exceptions. As suggested by Malkiel (1966: 433), the native child and the second language learner have to deal with the difficulty of discriminating cases in which such a rule is required, and be able to remember, for example, that a verb like *defender* /defender/ ‘to defend’ has a diphthongised form such as *defiendo* /defjendo/, when conjugated in the first person of the indicative present, whereas a verb like *ofender* /ofender/ ‘to offend’, phonologically similar to the former one, does not undergo diphthongisation when conjugated. The existence of phonological operations, which do not have a representational or an interpersonal basis, affects the transparency of a language.

The syllabic structure of Quechua does not allow for diphthongised vowels to be the head of a syllable, instead, it must necessarily be a monophthong. Semivowels do occur in Quechua but they behave as (approximant) consonants, restricted to the syllable boundaries, i.e. onset/coda, as stated by Weber (1989:450). This explains why the phenomenon of diphthongisation, as explained above, is not found in this language. And the same applies for nasalization.

Nasalization is the process whereby a vowel is pronounced as nasal due to the presence of a nasal consonant in its phonological environment. This process can

be accounted for in terms of nasalization rules, which may vary from language to language. For instance, in English, vowels generally nasalized when they precede nasal sounds (Finegan, 2008), whereas in Land Dayak languages vowels typically undergo nasalization after a nasal consonant (Scott, 1964). As in the case of diphthongisation, nasalization also implies the introduction of certain specifications at the Phonological Level, which are language-specific and not requested by the higher levels of representation, affecting, in that way, language transparency. I have not found evidence to account for nasalization rules as part of the grammar of Quechua, though it may well occur due to purely articulatory aspects.

#### 4.2.2 No sandhi rules

Sandhi rules refer to a variety of phonological processes that lead to the alteration of sounds and may occur either at morpheme boundaries, i.e. word-internal sandhi, or at word boundaries, i.e. word-external sandhi. The alteration of sounds due to sandhi rules includes processes such as fusion, assimilation and elision, which inevitably affect the ideal one-to-one mapping between units of meaning and units of form. Thus, sandhi phenomena are not expected in transparent languages.

In Quechua, we find processes leading to sound alteration, operating basically at morpheme boundaries, that is, in the combination between base, affixes and/or clitics. For instance, first person marking on verbs, which is conveyed by means of vowel lengthening, usually leads to lowering of high vowels, as is the case of *miku*: ‘I eat’, which is pronounced [miko:]. Lowering can also take place in more restricted contexts; for example, the high vowel of certain morphemes becomes /a/ when a certain suffix follows. This is the case of the reflexive *-ku*, which changes to *-ka* when followed by the pre-transitional directional suffix *-mu*, e.g. *sha-ku-mu-n*, come-REFL-AFAR-3, ‘he comes (from afar)’ is pronounced [ʃakamun]<sup>10</sup>. The phenomenon of nasal assimilation, whereby a final nasal assimilates to the point of articulation of the following consonant, is also common at morpheme boundaries, e.g. *tayta-n=paq*, father-3.POSS=PUR, ‘for his father’ is pronounced [tajtampaχ]. The existence of these and other phonological specifications that leads to sound alteration, operating mainly at morpheme boundaries, can be regarded as a non-transparent feature of Quechua.

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<sup>10</sup> For more details on the contexts where this phenomenon occurs, see Weber (1989:463)

### 4.2.3 No degemination

Degemination is a phenomenon whereby sequences of identical phonemes are articulated as single phonemes. This occurs, for example, in an English word such as *horrible*, where the coda of the first syllable /hɒr/ functions as the onset of the adjacent syllable /rɪb/, and so it would be represented at the Phonological Level as follows (Hengeveld and Mackenzie, 2008: 450):

(75) (PW<sub>i</sub>: (F<sub>i</sub>: [(SS<sub>i</sub>: /hɒr/(S<sub>i</sub>)) (S<sub>j</sub>: /rɪb/ (S<sub>j</sub>)) (S<sub>k</sub>: /b/ (S<sub>k</sub>)] (F<sub>i</sub>)) (PW<sub>i</sub>))

The Output Component (articulator) will reduce the sequence of phonemes /-rr-/ into a single one /-r-/ by means of a process of degemination. In a transparent grammar, degemination is not expected to operate, especially, at morpheme or word boundaries, as it would obscure the one-to-one correspondence between a unit of meaning and a unit of form.

In Quechua, degemination at morpheme boundaries does occur, e.g. *ichik* ‘little’+ *-kuna* ‘PL’ = *ichikuna* ‘little ones’. This is true when an affix such as *-kuna* is at stake. However, the cliticization of post-positions such as *-kama* is not subjected to processes of degemination according to Weber (1989:470). Thus, as for what degemination concerns, Quechua can be said to bear certain degree of transparency.

## 5 Conclusions

On the basis of the analysis presented in the previous sections, which aimed to account for degrees of transparency in the grammar of Quechua at different levels of representation, we could see that a number of morphosyntactic operations/processes, such as tense copying, agreement, declination, conjugation and grammatical gender, which do not have an interpersonal or representational counterpart, and so are regarded as linguistically opaque, are not part of the grammar of this language. Morphosyntactic operations in Quechua have generally a pragmatic and/or semantic basis, as is clearly the case of function marking, which, as shown above, is not sensitive to (morphosyntactic) nature of input, and so is conveyed by means of cliticization rather than affixation. Its agglutinating morphology, which rules the one-to-one correspondence between representational and morphosyntactic units in word formation, is also an important transparent characteristic in the grammar of this language, which has its phonological correlate, i.e. agglutinating languages are expected to present a strong correlation between morphosyntactic and phonological words.

However, Quechua also presents certain degree of opaqueness with respect to some of the characteristics mentioned in the previous sections. For instance, we have seen that cross-reference on the verbal predicate and instances of structural apposition affect the ideal one-to-one correspondence between interpersonal and representational units. Alignment in Quechua does not only depend on pragmatic or semantic factors, but morphosyntactic and phonological aspects, such as complexity and weight, may also intervene. The flexibility of this language with respect to the morphosyntactic organization/ordering of units from the higher levels is crucially supported by function marking, which helps to preserve the link between constituents and units of a constituent. However, in cases of raising, such flexibility clearly affects the semantic and syntactic integrity of constituents, which can be regarded as a non-transparent feature in the grammar of Quechua. There are also certain phonological processes in this language that are not requested at the higher levels and affect the ideal one-to-one relation between units of meaning and units of form. Thus, despite presenting remarkable transparent features in its grammar, Quechua cannot be regarded as a representative case of language transparency.

An important aspect that appears to characterize the central varieties of Quechua is the grammaticalization of the accusative marker *-ta*. As suggested by Weber (1989), this marker does not only serve to mark the Undergoer argument, but also Locative arguments; thus, it should be better regarded as an object marker, which serves to mark a syntactic function by neutralizing semantic oppositions. I consider relevant to refer to this ongoing phenomenon in the central varieties of Quechua because it gives support to the idea that diachronic change gradually ranks markedness over faithfulness, as suggested by Hengeveld (this issue).

As shown in this study, FDG offers a suitable framework to account for language transparency at different levels of representation. Further systematic typological research should allow to account for languages in terms of a scale of transparency and show how the degree of transparency/opaqueness of a given feature is related to that of another.

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