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Exploiting word order to express an inflectional category:

Reality status in Iquito

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Abstract

Iquito, a Zaparoan language of Peruvian Amazonia, marks a binary distinction between realis and irrealis clauses solely by means of a word order alternation. Realis clauses exhibit a construction in which no element intervenes between the subject and verb, while in irrealis clauses a phrasal constituent appears between the subject and verb. No free or bound morphology otherwise indicates whether an Iquito clause is realis or irrealis. Based on these facts and partially similar phenomena in other languages, this paper argues that typologies of inflectional exponence should be expanded to include word order as an inflectional formative.

KEYWORDS: inflection, word order alternation, realis/irrealis, Amazonia, Zaparoan, Iquito

1.   Introduction

Typological work has demonstrated that human languages draw on a relatively small set of formative types to express inflectional categories: affixes, clitics, free particles, and a number of non-concatenative processes such as ablaut and tone shift (Bickel and Nichols 2007; Spencer 1998; Stump 1998). Word order, however, has not been discussed in typologies of inflectional category exponence. In this paper we present evidence that Iquito, an endangered language of northern Peruvian Amazonia, exploits precisely this formal mechanism for expressing a tense-aspect-mood (TAM) category.[1] In particular, we show that in Iquito, word order alternations are the sole formal realization of a

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[1]Eastman and Eastman (1963), the sole major work on Iquito prior to those of the current authors, includes data exemplifying the relationship between word order and reality status analyzed in this paper. No note is made of the phenomenon in that work, however, nor is any analysis provided.

clausal realis/irrealis contrast (or reality status contrast, following Elliott [2000]). We describe in detail the structural restrictions governing the reality status word order alternation in Iquito, as well as the semantics underlying it, and we compare the Iquito word order alternation with somewhat similar phenomena in other languages, such as auxiliary inversion in English and word order alternations associated with negation in certain West African languages. We argue that the Iquito reality status alternation is an especially clear instance of word order serving to express an inflectional category, in that it relies *exclusively* on word order to express a core notional domain associated with inflection cross-linguistically, but that there are phenomena in other languages that also exhibit, to varying degrees, the use of word order to express inflectional categories. We conclude that the Iquito data, in conjunction with these comparative facts, argue for broadening the typology of inflectional formatives to include word order.

The Iquito reality status contrast is expressed by an alternation between two constructions that are distinguished solely by the position of non-subject phrasal constituents relative to the subject and the verb. Irrealis clauses exhibit an SXV construction, where an element intervenes between the subject and the verb, as in (1),[2] while realis clauses exhibit an SVX construction, where no element intervenes between the subject and the verb, as in (2); note that in all examples in this paper, the X element is underlined. The intervening element found in SXV constructions is relatively unrestricted in terms of constituent type: it may be an object (as it is in [1]), a postpositional phrase, an adverb, a determiner, or a negation particle.

(1) *Ima   asúraaja   capi-qui-ø.*   (SXV   order;   irrealis)
     Ema   manioc   cook-PERF-E.C.TENSE
     'Ema will cook manioc.'

(2) *Ima   capi-qui-ø   asúraaja.* (SVX   order;   realis)
     Ema   cook-PERF-E.C.TENSE   manioc
     'Ema cooked manioc.'

There is no difference in the lexical items in (1) and (2), the morphology they bear, or in the intonation of the sentences.[3] The sole difference between these two sentences is the order of the

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[2]This article uses the Iquito orthography developed by the *Centro del Idioma Iquito*. Graphemes correspond to their IPA equivalents, with the following exceptions: c, qu = [k], hu = [w], j = [h], y = [j], and r = [ɾ]. Iquito exhibits a contrast between short and long vowels; the latter are marked by doubling the vowel. Accent marks represent high tones.

[3]Because Iquito exhibits a complex prosodic system which combines the features of both stress and tone systems (Michael, forthcoming), members of the Iquito Language Documentation Project have closely studied pitch and intonation phenomena in both elicited and naturally-occurring Iquito speech.

identical elements they share. Sentence (1), which exhibits the SXV *irrealis order*, yields a future temporal reference interpretation, while sentence (2), which exhibits the SVX *realis order*, yields a non-future temporal reference interpretation. Word order alone is responsible for the contrasting temporal interpretations associated with each sentence, a difference attributable to the reality status values encoded by the irrealis and realis orders.

We begin in Section 2 with sociolinguistic background information on Iquito, as well as a typological profile of the language. In Section 3 we provide an overview of the typology of inflectional category exponence and a typologically-informed summary of views on reality status as a cross-linguistic grammatical category. Since there is cross-linguistic variation in the semantic parameters that determine reality status marking, we specify the factors relevant to Iquito in Section 4. We provide a detailed structural description of the Iquito reality status word order alternation in Section 5, outlining the elements that occur in the irrealis position in Section 5.3. Section 6 describes a phonological phenomenon that occurs when the irrealis position is empty. An overview of word order alternations in other languages reminiscent of the Iquito alternation is given in Section 7, with a discussion of how they differ from the Iquito case, and concluding typological comments are given in Section 8.

2.   Sociolinguistic background and typological profile

2.1.   Sociolinguistic background

Iquito is one of three remaining languages of the Zaparoan family, together with Arabela (about 75 speakers) and Záparo (about 10 speakers). Iquito is spoken in the *departamento* of Loreto in northern Peruvian Amazonia by approximately 25 elderly individuals (as of 2010). Most of these speakers live in the settlement of San Antonio de Pintuyacu, where the Iquito Language Documentation Project (ILDP) began collaborating with the community on language documentation and description in 2001.[4]   The data on which this paper is based were collected by the authors during fieldwork conducted between 2002 and 2008 as part of the ILDP. The examples come from both naturally-produced texts and targeted elicitations. All elicited examples included in this paper were produced by at least one speaker as translations of Spanish target sentences and later verified as grammatical by at least one other speaker. That is to say, elicited examples were not 'constructed' by the authors

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[4]For more information about the ILDP, visit http://www.cabeceras.org/indexiquito.html.

and then presented to speakers for grammaticality judgements.

2.2. Typological profile and TAM overview

Iquito displays nominative-accusative alignment, and core grammatical relations are coded by syntactic position. Basic constituent order is SVO, but focused NPs occupy a dedicated pre-verbal focus position, and topicalized arguments occupy positions at the clause margins (with a preference for the left edge of the clause). When core arguments are topicalized, a resumptive pronoun occurs in the corresponding argument position. Non-core arguments bear postpositional clitics that indicate their semantic relationship to their associated verbs. The language is thus mainly dependent-marking, but it also displays some head-marking features, including two (rarely used) applicative suffixes and prefixal possessor-marking on possessums.

Iquito morphology is mainly agglutinative, although the language also exhibits some non-concatenative morphology consisting of target stem shapes that trigger vowel lengthening and tonal shifts. Verbal morphology is exclusively suffixal. Nominal morphology is mostly suffixal, except for the aforementioned prefixal possessive marking. Verbs are obligatorily inflected for tense and aspect, and optionally take evidential marking.

Main clauses in Iquito are obligatorily marked for tense and aspect.[5] Iquito makes a basic distinction between perfective and imperfective aspect. The general perfective is marked by *-qui*, as in (1), or by a null allomorph when following stems with final long vowels, as in the complement clause in (10). This allomorph also surfaces when the perfective is followed by the recent past tense suffix *-cura*, as in (6). Iquito exhibits several additional aspectual morphemes that combine perfective semantics with spatial and other temporal meanings (see Lai [2009] for discussion). The imperfective is marked by lengthening of the stem-final vowel when that vowel is short, as in (18), or by the suffix *-yaa* when the stem-final vowel is long, as in (7). When followed by the recent past tense suffix, the imperfective surfaces as *-aa*. Iquito makes a three-way tense distinction between distant past, recent past, and *extended current* tense. Distant past tense is realized cumulatively with perfective aspect as *-quiaquɨ* and with imperfective as *-(y)aariquɨ*, while recent past tense is expressed by *-cura*. The extended current tense is essentially a non-pre-hodiernal tense, placing events in a temporal span extending from dawn of the day in which the deictic center is anchored into the indefinite future. The extended current tense is realized by zero-marking in all cases. In

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[5]Our discussion of TAM in Iquito is mainly based on Lai (2009).

cases of extended current tense, reality status marking serves to distinguish between present and future temporal reference. Finally, Iquito exhibits a potential mood suffix -*cuma* that is employed in optative constructions, as in (7), and in speculative declarative statives or epistemically weak predictions.

3.   Theoretical background

3.1.   Inflectional and derivational grammatical categories

For most languages, inflectional grammatical categories can be distinguished from derivational ones based on clusters of features prototypically associated with each type of grammatical category. Inflectional categories are prototypically characterized by two main features: 1) they do not alter the lexical meaning or word class of a word; and 2) the realization of inflectional categories is sensitive to their syntactic context (Bickel and Nichols 2007; Stump 1998). The latter criterion encompasses two related tendencies: i) for a clause to be well-formed, it must exhibit a realization of a particular inflectional category, and ii) the choice among elements that realize an inflectional category can be restricted by the grammatical features of other elements in the clause, or by the type of clause. In contrast, derivational grammatical categories prototypically change lexical meaning and/or word class, and are never required by specific constructions nor by the grammatical characteristics of other elements in a clause. In addition to these core characteristics, inflectional categories tend to be productive and semantically regular, while derivational categories often exhibit limited productivity, as well as semantic effects that are not fully predictable. Finally, in languages in which inflectional categories are realized by affixes, the addition of an inflectional morpheme to a stem edge generally closes that edge to the further addition of derivational morphology, whereas the addition of derivational morphology generally does not close a stem to the addition of inflectional morphology. Cross-linguistically, inflectional categories fall within a relatively constrained set of notional domains characterized by their ability to easily compose semantically with lexical contents (in the sense of Klein [1994]). These core domains include tense, aspect, modality, evidentiality, number, person, and gender, among others (Bickel and Nichols 2007; Stump 1998).

It is important to note that the distinction between inflectional and derivational grammatical categories described here holds between prototypical instances of these categories, and that non-

prototypical categories, either language-specifically or more generally, may occupy a position between the inflectional and derivational prototypes. This has led linguists such as Haspelmath (1996) to treat the inflectional/derivational distinction as a continuum, and to consider categories such as participles as occupying an intermediate position in the continuum. Another approach, that of Booij (1996), is to distinguish inherent inflection (which exhibits certain affinities to derivational morphology) from contextual inflection, where the latter, unlike the former, exhibits sensitivity to syntactic context.

3.2. Exponence of inflectional categories

While derivational categories are always marked by bound morphology, inflectional categories are known cross-linguistically to be expressed by a variety of *formative types* (Bickel and Nichols 2007). One major class of formative types consists of phonologically bound and categorially restricted concatenative or non-concatenative morphology, including affixation, reduplication, apophony, metathesis, and the manipulation of suprasegmental features such as tone and stress (Spencer 1998: 129-140). Inflectional categories may also be expressed by categorially unrestricted, but phonologically bound, formatives (clitics), as in (3), or by phonologically free formatives (particles), as in (4). Word order alone, however, has not surfaced in typologies of inflection as a means by which inflectional categories are realized (see e.g. Aikhenvald 2007; Bickel and Nichols 2007; Spencer 1998; Stump 1998).[6]

(3) *Ba   'urang 'ánga   =bia   =ka.*   *(Teiwa, Indonesia)*
     because   rain   aimlessly MODAL   =PERF
     'Because it began to rain unexpectedly.' (Klamer 1998: 53)

(4) *A-ha   korin.*   *(Kamaiurá, Brazil)*
     1S-go   FUT
     'I will go.' (Seki 2000: 136)

Although reality status in Iquito is not expressed by morphology, we consider it to be an inflectional category for three main reasons. First, the semantics of Iquito reality status coincides with a core notional domain within the cross-linguistic range of TAM categories (see Section 4). Second, all Iquito clauses are marked for reality status,[7] in the sense that the structural characteristics of

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[6]In Section 7, we review instances of word order alternations associated with inflectional categories in several languages and compare them to reality status marking in Iquito, and discuss the typological status of word order as a means of marking the inflectional category.

[7]As discussed in Section 6, the formal distinction between realis and irrealis clauses can be neutralized in certain circumstances.

any given clause yield an interpretation of the clause as having either realis or irrealis semantics. And third, the expression of reality status is fully grammaticalized, and is not expressed lexically, unlike, for example, the expression of temporal meanings using adverbs. In summary, reality status in Iquito falls squarely within the cross-linguistically attested semantic range of inflectional TAM categories and is obligatorily expressed by non-lexical means in all Iquito clauses. Except for the atypical exponence of the category, reality status is clearly an inflectional category in Iquito.

4.   The semantics of reality status in Iquito

We indicated above that the word order alternations exemplified in Section 1 serve to encode realis and irrealis reality status in Iquito; we now discuss the notional basis of this categorial contrast. Reality status is a grammatical category grounded in a distinction between realized eventualities, such as events that have taken place in the past, and unrealized eventualities, such as future events and hypothetical states of affairs (Elliott 2000; Mithun 1995). In grammaticalized reality status systems, the *realis* feature value indicates realized eventualities and the *irrealis* value indicates unrealized ones. Despite the overall cross-linguistic coherence of reality status as a grammatical category (Mithun 1995), there is variation in both the semantic parameters relevant to reality status marking, and in the inflectional feature values assigned (Elliott 2000; Palmer 2001). Reality status systems may be sensitive to negation or sentential mood, or may be insensitive to these semantic parameters. Similarly, particular semantic parameter values, such as habitual aspect, are marked realis in some languages, but irrealis in others (Palmer 2001: 158-159). For this reason, we devote this section to specifying the semantic factors that determine reality status marking in Iquito.

It should be noted that the cross-linguistic variability in the semantics of reality status marking has led to some skepticism regarding the cross-linguistic validity of this category (e.g. Bybee 1998). Nonetheless, most typologically-oriented linguists who have evaluated this question have affirmed the validity of reality status as a cross-linguistic grammatical category (e.g. Elliott 2000; Givón 1996; McGregor and Wagner 2006; Mithun 1995, 1999; Palmer 2001), and we concur.

In Iquito, the irrealis construction appears in clauses that exhibit future temporal reference, as in (1) above; counterfactual modality, as in (5) and (6); optative mood, as in (7) and (8); and in desiderative complements, as in (9) and (10). Clauses that do not exhibit these semantic characteristics, including clauses with non-future temporal reference and indicative modality, are

expressed with realis constructions. Several semantic parameters that trigger irrealis marking in other reality status systems, such as negation, conditional and interrogative modality, and imperative mood, do not do so in Iquito.

(5) *Quí=* *tɨ=* <u>*núquiica anitáaqui*</u> *pani-ø-cura,* *quí=* *tɨ=* <u>*nu*</u>
     1S=   CF=   one   peccary   search-PERF-REC.PST 1S=   CF=   3S
     mii-yaa-ø.
     have-IMPF-E.C.TENSE
     'If I had searched for a peccary, I would have one (now).'

(6) *Quí=* *tɨ=* <u>*iíti*</u> *iiqui-aa-cura,* *quí=* *tɨ=* <u>*iína*</u> *niqui-ø-cura* *mɨɨsáji.*
     1S=   CF=   here live-IMPF-REC.PST 1S=   CF=   DET   see-PERF-E.C.TENSE woman
     'If I had been here, I would have seen that woman.'

(7) *Tácari*   *yahuɨ́ɨni* *=jina* *quia=* <u>*núquiica simiími*</u> *nájuu-yaa-cuma.*
     other.indefinite day   =LOC   2S=   one   letter   write-IMPF-POT
     '(I hope) one day you will write a letter.'

(8) *Ca=* *quia=* <u>*naámɨ*</u> *cataa-cuma* *naji* *jɨɨta* *cana=*
     NEG= 2S=   leaves collect.IMPF-POT like.this how   1PL.EXCL=
     sujurisii-yaa-ø.
     suffer-IMPF-E.C.TENSE
     '(I hope) you don't collect (palm thatch) leaves like how we are suffering now.'

(9) *Quí=* *nacarɨɨ-yaa-ø* *[Ima* <u>*asúraaja*</u> *asa-qui-ø].*
     1S=   want-IMPF-E.C.TENSE Ema yuca   eat-PERF-E.C.TENSE
     'I want Ema to eat yuca.'

(10) *Saáca* *quia=* *nacarɨɨ-yaa-ø* *[quí=* <u>*quia =íicu*</u> *mii-ø-ø?].*
     what   2S=   want-IMPF-E.C.TENSE 1S=   2S   =BEN do-PERF-E.C.TENSE
     'What do you want me to do for you?'

5. Expression of reality status in Iquito

Having examined the semantic parameters and parameter values involved in the alternation between realis and irrealis constructions, in this section we focus on the structural details of these constructions. We begin by demonstrating in Section 5.1 that Iquito realis and irrealis constructions are not distinguished by morphology, but by word order alternations alone. In Section 5.2 we show that these word alternations are not consequences of the information structural status of the relevant constituents, and in Section 5.3 we describe the syntactic elements involved in the word order alternations.

5.1. Word order as a reality status formative

Pairs of sentences like those given in (1) and (2) show that alternations in word order correlate with alternations in the temporal reference of each sentence, despite the fact that there are no morphological differences between the two sentences. Examples (11) and (12) exhibit a similar word order alternation and the same semantic alternation, but these sentences exhibit different verbal morphology from the morphology exhibited in (1) and (2). Taken together, these pairs of examples illustrate that the notional realis/irrealis alternation is not associated with any morphological alternation, and moreover, that the word order alternation is not licensed by specific verbal morphology. Word order is the sole structural difference between the realis and irrealis sentence pairs, making it the sole overt expression of reality status in Iquito.

(11) *Nu=* *nacusi-rɨɨ-ø* <u>*naámɨ*</u> *taniini.* *(SVX   order;   realis)*
      3S= know-MMT.PRF-E.C.TENSE leaves weave.INF
      'S/he knows how to weave leaves.'

(12) *Nu=* <u>*naámɨ*</u> *nacusi-rɨɨ-ø* *taniini.* *(SXV   order;   irrealis)*
      3S= leaves know-MMT.PRF-E.C.TENSE weave.INF
      'S/he will know how to weave leaves.'

The structural alternation that differentiates the realis and irrealis constructions in Iquito can be characterized as follows: the realis construction is distinguished by the immediate adjacency of subject and verb, while the irrealis construction is distinguished by the occurrence of a phrasal constituent between the subject and the verb (providing such an element is available).[8] We refer to the position between the subject and the verb, which is available only in the irrealis construction, as the *irrealis position*.

The identity of the element that appears in the irrealis position of irrealis constructions is constrained by the syntactic structure of the corresponding realis clause. Specifically, given an irrealis clause in which a constituent X (which may consist of one or more words) is located in the irrealis position, there is a corresponding realis clause in which that element is found immediately to the right of the verb, as schematized in (13).

(13) *Irrealis   :   Realis*
      S X V   :   S V X

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[8]Two syntactic processes, namely interrogative formation and NP focus, extract NPs from their normal positions, rendering them unavailable to appear in the irrealis position. The interaction of NP focus and irrealis constructions is beyond the scope of this paper.

Note that the eligibility of a phrasal element to appear in the irrealis position depends strictly on its position in a corresponding realis clause, and not on grammatical relations. Clear evidence of this fact is provided by constructions whose verbs take non-finite verbal complements, which we now examine.

In realis clauses whose verbs take non-finite complements, the object of the non-finite verb appears immediately before it, as shown in (14), where the first person singular pronoun *quí* is the object of the non-finite verb *niquíini*. Significantly, as shown in (15), it is the object of the non-finite verb that appears in the irrealis position of the matrix clause in the irrealis counterpart to this construction. The element that appears in the irrealis position in this case has no direct grammatical relation to the clause in which it appears. Rather, its occurrence in the irrealis position is due entirely to its appearing in the immediately post-verbal position in the corresponding realis clause.

(14)   *Caa*   *quia=*   *pajii-ø*   [*quí=*   *niquíini*   *ihuárica*].
       NEG   2S=   be.able.to.IMPF-E.C.TENSE   1S=   see.INF   now.and.again
       'You can never see me again.'

(15)   *Ca*   *=quija*   *na=*   *quí*   *parii-ø-ø*   *amuuni.*
       NEG   =ADVR   3PL=   1S   be.able.to-PERF-E.C.TENSE   kill.INF
       'But they won't be able to kill me.'

5.2. Reality status and information structure

Since word order alternations are associated with information structure in many languages (including Iquito), it is important to note that the word order alternation associated with the realis/irrealis contrast in Iquito is not a consequence of the information structural status of the elements involved in the constructions. In Iquito, topicalized and focused constituents are restricted to dedicated sentential positions that are unambiguously distinct from the irrealis position, such that it is not possible to explain the realis/irrealis word order alternation as a consequence of the information structural status of the constituents involved.

Topicalized constituents occur at sentence margins, typically at their left edges, and topicalized core arguments necessarily co-occur with a resumptive pronoun that appears in normal argument position. Topicalized constituents are also marked prosodically by a characteristic intonation contour that begins with a relatively high pitch, and falls towards the end of the topicalized constituent; the

remainder of the sentence resumes with a jump in pitch. Subject topicalization is exemplified in (16), where the topicalized NP *iína icuáni* 'the man' appears at the left edge of the sentence, and co-occurs with the co-referential resumptive pronoun *nu* '3S', which appears in the subject position. Object topicalization is exemplified in (17), where the NP *iína taána iímina* 'the other canoe' appears in the left edge topic position, and the resumptive pronoun *nuú* '3S' appears in object position following the verb. Note that in neither case does topicalization result in an element intervening between the subject and verb, demonstrating that topicalization can be ruled out as a process responsible for the realis/irrealis word order alternation.

(16) [Iína   icuáni]$_{TOP}$ nu=   iícua-qui-ø   tíira.   (SVX;   realis)
      DET   man   3S=   go-PERF-E.C.TENSE   there
      'The man, he went over there.'

(17) [Iína   taána   iímina]$_{TOP}$ quí=   iricatájuu-ø-ø   nuú.   (SVX;   realis)
      DET   other   canoe   1S=   repair-PERF-E.C.TENSE   3S
      'The other canoe, I fixed it.'

Focused constituents in Iquito occur in a dedicated syntactic position to the left of the subject, and to the right of the topic position. An instance of object focus is given in (18), which exhibits OSV order instead of the basic SVO constituent order. As this example illustrates, focused constituents do not occupy the irrealis position, demonstrating that the word order alternation associated with the realis/irrealis contrast does not stem from NPs being focused.

(18) [Cuuhuaa]$_{FOC}$ nu=   asaa-ø   (Focused   O   SV;   realis)
      meat   3S=   eat.IMPF-E.C.TENSE
      'S/he is eating *meat*.' (Response to: 'What is she eating?')

The relative order of topic, focus, and subject positions is exemplified in (19). The object of this sentence (*iína cúsi* 'the pot') has been topicalized and occurs to the left of the focused adverb *tíira=ji* 'from there', which occurs to the left of the first person singular pronominal subject. Note the co-referential resumptive pronoun found in the object position after the verb, which identifies the topicalized NP as coreferential with the object of the clause.

(19) [Iína   cúsi]$_{TOP}$ [tíira   =ji]$_{FOC}$ [quí]$_S$=   iritaa-ø-ø   nuú   iíta   =jinacuma
      DET   pot   there   =ABL   1S=   carry-PERF-E.C.TENSE   3S   house   =inside
      =ji.
      =ABL
      'The pot, I am carrying it *from there* from inside the house.'

The above examples show that neither topicalized nor focused elements appear in the irrealis position. We now demonstrate that topicalized and focused constituents can appear in irrealis sentences, where another element occurs in the irrealis position, indicating that these latter elements are not themselves topicalized or focused. An irrealis sentence with a topicalized NP is given in (20), while one with a focused NP is given in (21). The topicalized and focused constituents occupy the same positions in realis clauses and irrealis clauses, namely the left edge of the clause. Since these positions do not coincide with the irrealis position, we conclude that the realis and irrealis word orders are not a consequence of the information structural status of the elements in the clause.

(20) [Iína miisáji]$_{TOP}$ nu= nu-iímina iricatájuu-rɨɨ-ø   amicaáca.
     DET   woman   3S= 3S-canoe   repair-MMT.PRF-E.C.TENSE one.day.away
     'This woman, she will repair her canoe tomorrow.'

(21) [Pápaaja]$_{FOC}$ nu= amicaáca   asa-rɨɨ-ø.
     fish   3S= one.day.away eat-MMT.PRF-E.C.TENSE
     'S/he will eat *fish* tomorrow.'

5.3. Elements that occupy the irrealis position

5.3.1. Overview

Having described the irrealis construction in general terms, in this section we list and characterize the elements that can appear in the irrealis position of this construction. The elements that can occupy the irrealis position include object NPs, postpositional phrases, adverbs, the negative particle, and determiners. To generalize, these elements are the immediately post-verbal phrasal constituents found in the realis counterparts to the irrealis clauses in question. This generalization is potentially ambiguous, however, since it is common for the immediately post-verbal *word* to be the member of more than one phrase, at different levels of embedding (e.g. an adjective heads its own AdjP, but is also a dependent element in a larger NP). More precisely, the element that appears in the irrealis position is the smallest post-verbal constituent that contains: a) the immediately post-verbal word, and b) if that word is a dependent in a head-dependent relationship, the head associated with the immediately post-verbal word. The consequence of this latter requirement is that entire arguments appear in the irrealis position, and not, say, solely an adjective, with the noun stranded in post-verbal position. This generalization is, however, complicated by the unusual behavior of determiners in Iquito, which we discuss in detail in Section 5.3.6.

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A summary of the types of elements found in the irrealis position is given in Table 1, along with schematizations of the relevant irrealis constructions and their realis counterparts. Each construction type is exemplified and discussed below.

Insert Table 1 here

5.3.2. Object NPs

Object NPs are the most common element type in the Iquito text corpus to appear in the irrealis position, with pronouns being especially common. The sentences in (22), drawn from a text about an infusion made from a certain kind of tree root, form a near minimal pair illustrating this alternation. In (22a), the third person singular pronoun *nuú* precedes the verb, and the clause has an irrealis reading, and in (22b), this same pronoun follows the verb, and the clause has a realis reading. This example pair mirrors the example pairs involving simple referential NP objects given in (1) & (2) and (11) & (12) above.

(22)   a. *Naji*   *taaríqui*   *quia=* *nuú* *raati-qui-ø,*   *siisaramajitáami* *yahuíini*
          this.many   morning   2S=   3S   drink-PERF-E.C.TENSE   three   day
          raatisana   *tíi.*
          drink.NOM   COP
          'This many mornings [speaker gestures to indicate number of days] you will drink it, three days of drinking.'

       b. *Nu=*   *raati-qui-ø*   *nuú,*   *nu=* *ima-rii-ø*   *nuú,*
          3S=   drink-PERF-E.C.TENSE   3S   3S=   swallow-MMT.PRF-E.C.TENSE   3S
          nuurica   *=yáaja.*
          just.that   =alone
          'She drank it, she swallowed it all up.'

We now turn our attention to examples of objects of ditransitive verbs and to syntactically complex objects appearing in the irrealis position. Note that since objects typically appear immediately post-verbally in realis clauses (unless focused, as we saw in [18]), the irrealis constructions we now consider satisfy the constraint that elements that appear in the irrealis position appear immediately post-verbally in the counterpart realis clause.

In irrealis clauses with ditransitive verbs, either the direct object or the indirect object may appear in the irrealis position, as in (23a) and (24a), respectively. Note in Iquito, direct and indirect objects of ditransitive verbs exhibit flexible ordering in realis clauses, based on informational

structural factors, as evident in (23b) and (24b). For this reason, either object can appear in the irrealis position of the irrealis construction, since either object of a ditransitive verb can occur in the immediately post-verbal position of counterpart realis clauses.

(23) a. *Quí= <u>nuú</u> masɨɨ́tɨɨ-rɨɨ-ø*   *Jaime.*
          1S=   3S   sell-MMT.PRF-E.C.TENSE Jaime
          'I will sell it to Jaime.'

      b. *Quí= masɨɨ́tɨɨ-yaa-ø*   <u>*nuú*</u> *Jaime.*
          1S=   sell-IMPF-E.C.TENSE 3S   Jaime
          'I am selling it to Jaime.'

(24) a. *Quí= <u>Jaime</u> masɨɨ́tɨɨ-rɨɨ-ø*   *nuú.*
          1S=   Jaime   sell-MMT.PRF-E.C.TENSE 3S
          'I will sell it to Jaime.'

      b. *Quí= masɨɨ́tɨɨ-ø-cura*   <u>*Jaime*</u> *nuú.*
          1S=   sell-PERF-REC.PST Jaime   3S
          'I sold it to Jaime.'

In the case of complex object NPs consisting of a noun and one or more modifiers (i.e. adjectives or quantifiers), the entire object NP occurs in the irrealis position, as in the case of the adjective modified object NP in (25a). Note that adjectives may precede or follow the noun in Iquito, and that this flexibility is not affected by the reality status of the clause, as can be seen by comparing (25) and (26).[9]

(25) a. *Amicaáca*   *Ima* <u>*umáana pápaaja*</u> *asa-rɨɨ-ø.*
          one.day.away Ema   big   fish   eat-MMT.PRF-E.C.TENSE
          'Tomorrow Ema will eat a big fish.'

      b. *Amicaáca*   *Ima* *asa-ø-cura*   <u>*umáana pápaaja.*</u>
          one.day.away Ema   eat-PERF-REC.PST big   fish
          'Yesterday Ema ate a big fish.'

(26) a. *Amicaáca*   *Ima* <u>*pápaaja umáana*</u> *asa-rɨɨ-ø.*
          one.day.away Ema   fish   big   eat-MMT.PRF-E.C.TENSE
          'Tomorrow Ema will eat a *big* fish.'

      b. *Amicaáca*   *Ima* *asa-ø-cura*   <u>*pápaaja umáana.*</u>
          one.day.away Ema   eat-PERF-REC.PST fish   big
          'Yesterday Ema ate a *big* fish.'

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[9]The relative order of adjective and noun depends on the information status of the adjective. The default order is Adj N, but N Adj order results from contrastive focus on the adjective.

Complex object NPs which include quantifiers behave slightly differently in that only QuantN order is permitted, as in (27).

(27)   a. *Quí=*   <u>*núquiica anitáaqui*</u> *pani-qui-ø.*
          1S=   one   peccary   search-PERF-E.C.TENSE
          'I will search for a peccary.'

        b. *Quí=* *pani-qui-ø*   <u>*núquiica anitáaqui.*</u>
          1S=   search-PERF-E.C.TENSE one   peccary
          'I searched for a peccary.'

This order is also evident in the textual examples provided in (28).

(28)   a. *Pɨ=*   *cuhuíini*   *=íira*   *curáaca,* *quia=* <u>*pɨyɨɨni saacáaya*</u>
          1PL.INCL= become =in.order.to chief   2S=   all   things
          saminíjuu-ø-ø,   *iimi*   *taa*   *suhuáa-mi.*
          think-PERF-E.C.TENSE REL.PL.INAN COP good-PL.INAN
          'In order to become chief, you will think about everything that is good.'

        b. *Iyami ácuji* *nu=* *mii-yaáriquɨ*   <u>*pɨyɨɨni saacáaya,*</u> *iípɨ*
          because   3S=   do-IMPF.RPST all   things   REL.PL.AN
          nacusi-ji-aáriquɨ   *caa* *táa-pɨ*   *miini.*
          know-NEG-IMPF.RPST NEG other-PL.AN do.INF
          'Because he did everything that the others didn't know how to do.'

Complex object NPs involving both a quantifier and an adjective exhibit rigid QuantNAdj order, both in irrealis clauses, as in (29a), and in their realis counterparts, as in (29b).

(29)   a. *Quí=* <u>*cuúmi*   *mutúuru mɨɨnami*</u>   *masɨɨ-rɨɨ-ø.*
          1S=   two.PL.INAN motor   black.PL.INAN buy-MMT.PRF-E.C.TENSE
          'I will buy two black motors.'

        b. *Quí=* *masɨɨ-yaa-ø*   <u>*cuúmi*   *mutúuru mɨɨnami.*</u>
          1S=   buy-IMPF-E.C.TENSE two.PL.INAN motor   black.PL.INAN
          'I am buying two black motors.'

The fact that entire complex object NPs that include adjectives and/or quantifiers appear in the irrealis position, rather than just the modifier, follows from the generalization that the elements occupying the irrealis positions of irrealis clauses are the smallest phrases that contain both the immediately post-verbal word in the corresponding realis clause *and* any head that the immediately post-verbal word is in a head-dependent relationship with. In cases where the immediately post-verbal element is an adjective or quantifier, this requirement guarantees that the associated noun

appears together with the adjective in the irrealis position, as well as any other nominal modifiers, since they too are included in the NP that contains the noun in question.

The other type of complex object NPs that are found in the irrealis position are possessive phrases. Iquito possessive phrases are of two types: one in which the possessor is realized as a referential NP, and one in which the possessor is realized as a possessive prefix on the possessum, resulting in a morphologically complex but syntactically simplex NP. In the former case, the two NPs appear in Possessor Possessum order. Both types of possessive constructions occur in the irrealis position when they surface as object NPs, as shown in (30) and (31) below, as well as (20) above.

(30)   a. *Quí=*   <u>*icuani-huɨ́ya iímina-ca*</u>   *iricatájuu-rɨɨ-ø.*
             1S=   man-PL   canoe-PL   fix-MMT.PRF-E.C.TENSE
             'I will fix the men's canoes.'

        b. *Quí=*   *iricatájuu-yaa-ø*   <u>*icuani-huɨ́ya iímina-ca.*</u>
             1S=   fix-IMPF-E.C.TENSE   man-PL   canoe-PL
             'I am fixing the men's canoes.'

(31)   a. *Iína icuáni$_i$*   *nu$_i$=*   <u>*nu$_i$-náana*</u>   *jimata-rɨɨ-ø.*
             DET man   3S=   3S-tree   remove-MMT.PRF-E.C.TENSE
             'The man will remove his timber.'

        b. *Iína icuáni$_i$*   *nu$_i$=*   *jimataa-ø*   <u>*nu$_i$-náana.*</u>
             DET man   3S=   remove.IMPF-E.C.TENSE   3S-tree
             'The man removes his timber.'

The fact that possessive phrases like the one in (30a) appear in the irrealis position as entire possessive phrases – and not as partial phrases where the possessum is stranded in post-verbal position – follows from the fact that dependent elements do not strand their heads in post-verbal position; rather, both dependent and head appear in the irrealis position. In the case of possessive phrases, the immediately post-verbal word in the counterpart realis sentence is the possessor, which stands in a dependent-head relationship with the possessum, which is the head of the possessive phrase. The smallest constituent that contains both the immediately post-verbal word in the realis construction and its associated head is thus the entire possessive phrase, meaning that it is this larger constituent that appears in the irrealis position of the corresponding irrealis clause, and not simply the possessor NP.

5.3.3. Postpositional phrases

Oblique arguments also appear in the irrealis position of irrealis constructions, as part of larger postpositional phrases. Iquito postpositions are NP enclitics, as evident in (32), where the basic locative postposition *=jina* attaches to the right edge of its complement NP.

(32) *Quí= musii-ø tíira cacúti musútina =jina.*
    1S= swim.IMPF-E.C.TENSE there beach white =LOC
    'I am going to swim over there to the white beach.'

Postpositional phrases may appear in the irrealis position, as in (33a), when they immediately follow the verb in the corresponding realis clause, as in (33b). Both the postposition and its nominal complement appear together in the irrealis position, following the generalization that it is the smallest phrasal constituent including the post-verbal word (of the corresponding realis clause) and its associated heads that appear in the irrealis position. Also, since Iquito postpositions are NP clitics, we would expect that postpositions would move with their hosts to the irrealis position in any case.

(33)   a. *Quí-níyaaca <u>Iquito =jina</u> iícu-maa-ø.*
        1S-husband <u>Iquitos =LOC</u> go-REM.PRF-E.C.TENSE
        'My husband will go to Iquitos (in the distant future).'

     b. *Quí-níyaaca iíquii-ø <u>Iquito =jina.</u>*
        1S-husband live.IMPF-E.C.TENSE <u>Iquitos =LOC</u>
        'My husband lives in Iquitos.'

Note that the NP complements of postpositions may themselves be complex, as in the irrealis clause given in (34). As predicted, the entire postpositional phrase appears in the irrealis position, since the phrase that includes the head on which the immediately post-verbal noun of the realis clause is dependent, i.e. the postpositional phrase, includes the adjective modifying the noun.

(34) *Amicaáca quí= <u>aasámu isitina =iyáaji</u> samaráata-rɨɨ-ø.*
    one.day.away 1S= <u>stream deep =at.edge</u> rest-MMT.PRF-E.C.TENSE
    'Tomorrow I will rest at the edge of the deep stream.'

5.3.4. Adverbs

We now turn to constituents that can appear in the irrealis position but lack a nominal subconstituent, beginning with adverbs. In (35a) we see that an adverb appears in the irrealis position

of the clause, and that the same adverb appears in the immediately post-verbal position of the corresponding realis clause in (35b).

(35) a. *Quí= suhuaáta maquɨ-qui-ø.*
      1S=   well   sleep-PERF-E.C.TENSE
      'I am going to sleep well.'

    b. *Quí= maquɨ-qui-ø   suhuaáta.*
      1S=   sleep-PERF-E.C.TENSE well
      'I slept well.'

The same alternation can be seen in the textual examples given in (36). The adverb precedes the verb in the irrealis clause in (36a) and follows the verb in the realis clause in (36b).

(36) a. *Quí= ihuɨɨrɨ-saa-ø-cari,   quí-nahuɨyíni cáami*
      1S=   die-NASRT.IMPF-E.C.TENSE-NASRT 1S-spirit   upriver
      iíqui-qui-ø.
      live-PERF-E.C.TENSE
      'If I die, my spirit will live upriver.'

    b. *Jaári   nu= iícua-qui-ø   tíira náqui =jinacuma.*
      already 3S= go-PERF-E.C.TENSE   there forest =inside
      'So he went there inside the forest.'

Although adverbs have been analyzed in other languages as adjuncts that can adjoin to various positions within the clause, including between the subject and verb (e.g. Cinque 1999; Ernst 2002), in Iquito it is ungrammatical for an adverb to appear between the subject and the verb of a realis clause. This is true of both temporal and manner adverbs, as shown in (37) and (38), respectively.

(37) **Iína icuáni nu= amicaáca   jicata-ø-cura   nu-náana.*
      DET   man   3S= one.day.away remove-PERF-REC.PST 3S-tree
      TARGET: 'That man, he removed his timber yesterday.'

(38) **Icuáni maacuáarica asa-qui-ø   iína pápaaja.*
      man   slowly   eat-PERF-E.C.TENSE DET fish
      TARGET: 'A man ate the fish slowly.'

Similarly, we show in Section 5.3.7 that it is ungrammatical for adverbs to co-occur with another element (such as an object NP) in the irrealis position. In light of the single element restriction we discuss in that section, this behavior indicates that the adverb fills the irrealis position when appearing there, rather than adjoining to an adjacent syntactic position.

5.3.5. Negation

The negative particle $ca \sim caa$[10] can also appear in the irrealis position under specific syntactic circumstances. We begin by describing main clause declarative negation, which does not permit negative particles to appear in irrealis position, and then turn to a form of subordinate negation, which does.

The default clausal negation pattern in Iquito, found in declarative main clauses and in complement clauses, involves the negative particle $ca \sim caa$, which appears immediately preceding the subject and to the right of any topicalized constituents that may be present. Because the default position of this particle in realis clauses is pre-verbal, it is unable to fill the irrealis position. Consider the realis clause in (39), where the negative particle *caa* occurs between the topicalized NP *iína icuáni* and the subject resumptive pronoun *nu*. As we see in the irrealis clause in (40), the negative particle likewise appears between the topicalized NP and the subject pronoun *nu*, its position unaffected by the reality status alternation.

(39) *Iína   icuáni   ca=   nu=   casiúta-qui-ø   pápaaja.*
      DET   man   NEG=   3S=   catch-PERF-E.C.TENSE fish
      'The man did not catch fish.'

(40) *Iína   mɨɨsáji ca=   nu=   asúraaja saquɨɨ́-rɨɨ-ø   amicaáca.*
      DET   woman   NEG=   3S=   manioc   chew-MMT.PRF-E.C.TENSE   one.day.away
      'The woman will not chew manioc tomorrow.'

The negation construction which is the source of negative particles that *can* occupy the irrealis position appears in interrogative clauses and in non-complement subordinate clauses, such as relative clauses, reason clauses and purposive clauses, among others. In the realis versions of these clause types, negation is realized by two morphemes, a verbal negation suffix *-ji* and the negative particle *caa*, which in such constructions appears immediately post-verbally, as in the reason clause in (41). The negation particle may be optionally omitted, but appears in most cases. We refer to this negation strategy as *ji-caa* negation.

(41) *Iína   mɨɨsáji ca=   nu=   masɨɨ-ø-ø   arroz [iyami ácuji nu=*
      DET   woman   NEG=   3S=   buy-PERF-E.C.TENSE rice   because   3S=
      mii-ji-ø-ø   caa   cuuríqui].
      have-NEG-PERF-E.C.TENSE   NEG   money

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[10]Like all monosyllabic, syntactically-independent elements in Iquito, the negative particle *ca=* cliticizes to an appropriate host on its right when such a host is available; in all other cases, it appears as an independent phonological word (*caa*), having undergone moraic augmentation to satisfy the language's bimoraic minimum word requirement.

'The woman is not buying rice because she does not have money.'

The irrealis counterparts of realis *ji-caa* negated clauses exhibit a number of configurations, reflecting variation among speakers. In the most common configuration, the negation particle *caa* appears in the irrealis position, as we would expect from its immediately post-verbal position in counterpart realis clauses. This pattern is exemplified by (42), where *caa* appears in the irrealis position of a relative clause that exhibits *ji-caa* negation.

(42) *Jáana   tɨ́ɨ   iína   paráatu   [nu=   <u>ca=</u>   siquita-ji-rɨɨ-ø]?*
     which   COP   DET   plate   3S=   NEG=   wash-NEG-MMT.PRF-E.C.TENSE
     'Which is the plate that she will not wash?'

In the second attested configuration, favored by one speaker in particular (Ema Llona Yareja), the negative particle *caa* is doubled, occurring both in the irrealis position and following the verb, as in (43). Although this doubling behavior is unexpected, it does not falsify the generalization regarding the elements eligible to occupy the irrealis position, as the negative particle *caa* appears immediately post-verbally in the corresponding realis clause, given in (44).

(43) *Iína   mɨɨsáji   nu=   <u>Iquito   =jina</u>   iícua-rɨɨ-ø*   *[nɨ́hua ácuji   nu=   <u>ca=</u>*
     DET   woman   3S=   Iquitos =LOC   go-MMT.PRF-E.C.TENSE   for.that.reason   3S=   NEG
     siquita-ji-rɨɨ-ø   *caa   nu-sinaáquɨ].*
     wash-NEG-MMT.PRF-E.C.TENSE   NEG   3S-clothes
     'The woman will go to Iquitos and that is why she will not wash her clothes.'

(44) *Iína   mɨɨsáji   nu=   iícua-ø-cura*   *Iquito   =jina [nɨ́hua ácuji   nu=*
     DET   woman   3S=   go-PERF-REC.PST   Iquitos =LOC   for.that.reason   3S=
     siquita-ji-ø-cura   *caa   nu-sinaáquɨ].*
     wash-NEG-PERF-REC.PST   NEG   3S-clothes
     'The woman went to Iquitos and that is why she didn't wash her clothes.'

5.3.6.   Determiner behavior in irrealis constructions

In Sections 5.3.2 and 5.3.3, we demonstrated that entire complex phrasal constituents, such as complex object NPs and postpositional phrases, appear in the irrealis position, and moreover, that no subconstituents are separated from phrases that occur in that position and consequently left stranded in other syntactic positions. Phrases involving determiners exhibit different behavior, however, in that they often appear in the irrealis position alone, stranding their associated noun in post-verbal position. We will argue in this section that this behavior stems from the fact that Iquito

determiners are currently in an intermediate stage in grammaticalizing from apposite demonstratives to determiners in a head-dependent relationship with their associated nouns.

We begin by examining the behavior of determiners that form part of verbal objects in irrealis clauses. As is evident in (45a), determiners in such contexts occur alone in the irrealis position, with their associated nouns appearing in post-verbal position. In the corresponding realis clause, both the determiner and its associated noun follow the verb, as shown in (45b), with the determiner appearing in immediately post-verbal position.

(45) a. *Nu=* *iína* *simiita-qui-ø* *simiímɨ*. *(SXV order; irrealis)*
         3S=   DET   read-PERF-E.C.TENSE book
         'S/he will read this book.'

      b. *Nu=* *simiita-qui-ø* *iína* *simiímɨ*. *(SVX order; realis)*
         3S=   read-PERF-E.C.TENSE DET   book
         'S/he read this book (earlier today).'

Significantly, it is ungrammatical for a determiner to co-occur with its associated noun in the irrealis position, as demonstrated in (46).

(46) *Nu=* *iína pápaaja* *asa-rɨɨ-ø*.
        3S=   DET fish   eat-MMT.PRF-E.C.TENSE
        TARGET: 'S/he will eat this fish.'

Note that the behavior of direct and indirect objects of ditransitive verbs is identical: only the determiner of (one of) the objects occurs in the irrealis position, with the determiner's associated noun and the other object following the verb, as in (47).

(47) *Quí=* *iína* *miitɨí-rɨɨ-ø* *pápaaja* *Pedro*.
        1S=   DET   give-MMT.PRF-E.C.TENSE fish Pedro
        'I will give the fish to Pedro.'

More complex noun phrases that include determiners, such as possessive phrases, or those involving adjectives and quantifiers, display similar behavior. We first consider NPs that contain either adjectives or quantifiers in addition to determiners.

NPs of this sort display essentially the same behavior as single nouns with determiners: the determiner occurs in the irrealis position and the remainder of the NP follows the verb, as in (48) and (49). Recall from (25) and (26) that Adj N order is flexible, a generalization that also holds for this context.

(48) *Iína   máaya   nu=   iína   iricatájuu-rɨɨ-ø*   *umáana   iímina.*
     DET   child   3S=   DET   repair-MMT.PRF-E.C.TENSE   big   canoe
     'The child will repair the big canoe.'

(49) *Amicaáca   quí=   iína   masɨɨ-rɨɨ-ø*   *mutúuru   saámina.*
     one.day.away   1S=   DET   buy-MMT.PRF-E.C.TENSE   motor   new
     'Tomorrow I will buy this new motor.'

The same behavior is exhibited by quantifier-modified nouns that appear with determiners, as in (50).

(50) *Amicaáca   quí=   iími   cuucúu-rɨɨ-ø*   *cuúmi   sáhuiri.*
     one.day.away   1S   DET.PL.INAN   sharpen-MMT.PRF-E.C.TENSE   two.PL.INAN   machete
     'Tomorrow I will sharpen these two machetes.'

Possessive phrases with associated determiners present an additional level of complexity, stemming from the unusual syntax of definite possessive phrases in Iquito. Recall from Section 5.3.2 that Iquito exhibits two possessive constructions, one in which the possessor is indicated by a possessive prefix and another in which it is indicated by nominal apposition. Determiners may occur in both of these constructions, and in both cases the determiner precedes the possessor-possessum pair. In irrealis clauses with a definite possessive phrase object in which possession is indicated by a possessive prefix, the determiner appears in the irrealis position, and the syntactically simplex NP appears in the post-verbal position, as expected, as in (51).

(51) *...atɨ́ira   quia=   iína   amítata-cuaa-ø*   *quia-táasa.*
     there   2S=   DET   open-DEI-E.C.TENSE   2S-basket
     '...there you will open your basket.'

Cases involving referential NP possessors are more complicated. In the absence of a determiner, the two apposite nouns in a possessive phrase appear in Possessor Possessum order (e.g. *icuáni iímina* '(a) man's canoe'). Possessive phrases with a definite possessor or possessum exhibit a different order, however: Determiner Possessum Possessor, as in the realis clause given in (52). That the determiner is associated with the possessor is clear from the plural animate marking on the determiner, which agrees with the animate possessor *mɨrajaárica* 'children' and not the inanimate possessum *titíhua* 'feet'.

(52) *Quí=   siquitaa-ø*   *[iúpɨᵢ   titíhua   mɨrajaáricaᵢ]*
     1S=   wash.IMPF-E.C.TENSE   DET.PL.AN   foot.PL   child.PL.DIM
     'I am washing the children's feet.'

In the irrealis counterparts to such clauses, two structurally distinct configurations arise, depending on which NP of the possessive phrase the determiner is associated with. In the first configuration that we consider, the determiner is associated with the possessum, as in (53), where the association between these two elements is evident in the plural animate agreement exhibited by the determiner. In this case, the determiner appears alone in the irrealis position, as expected, with its associated noun appearing post-verbally. Although the noun associated with the determiner (i.e. the possessum *míra* 'children') is the head of the possessive phrase, the determiner and the possessum do not stand in a head-dependent relationship with one another, as discussed above, meaning that there is no requirement that the possessum appear with its associated noun in the irrealis position. The possessor noun, bearing no direct relationship to the determiner appearing in the irrealis position, likewise remains in post-verbal position.

(53) | *Amicaáca* | *quí=* | *iípɨ*$_i$ | *síhuɨɨra-cuaa-ø* | *mɨɨsáji* | *mɨ́ra*$_i$. |
|---|---|---|---|---|---|
| one.day.away | 1S= | DET.PL.AN | visit-DEI-E.C.TENSE | woman | child.PL |

'Tomorrow I will go there to visit the woman's children.'

In the second configuration, the determiner is associated with the possessor, and the determiner and possessum occur in the irrealis position, as in (54), with the association between the determiner and the possessor evidenced by the plural animate marking on the determiner. The fact that the determiner and the possessum appear in the irrealis position follows from the fact that the determiner forms part of the possessor NP, which as a whole is a constituent that depends on the possessum, which is the head of the entire possessive phrase. Recall that the requirement on the elements that appear in the irrealis position is that they form the smallest constituent that includes both the immediately post-verbal word in the corresponding realis clause and any head that the immediately postverbal word may be in a head-dependent relationship with. In this case, the immediately postverbal word, the determiner, is dependent on the possessum, and as a result, both the determiner and possessum appear in the irrealis position. If this analysis is correct, this reveals an interesting fact: the noun associated with the determiner is in a sufficiently loose relationship with the determiner that it does not form a constituent with it, at least not for the purposes of dictating which elements occupy the irrealis position in constructions of this sort. We return to this point below.

(54) | *Amicaáca* | *quí=* | *iípɨ*$_i$ | *sinaáquɨ* | *siquita-rɨɨ-ø* | *mɨrajaárica*$_i$. |
|---|---|---|---|---|---|
| one.day.away | 1S= | DET.PL.AN | clothes | wash-MMT.PRF-E.C.TENSE | child.PL.DIM |

'Tomorrow I will wash those children's clothes.'

Postpositional phrases that have nominal complements with associated determiners can also serve as the source of the material that appears in the irrealis position. In such cases, the determiner and the postposition appear together in that position, as in (55a). Since postpositions cliticize to determiners in NPs that include them, as can be seen in the realis clause in (55b), we can explain the appearance of the determiner and postposition together in the irrealis position as a simple consequence of the appearance of the determiner in that position, which necessarily brings along the attached postposition, but strands the associated noun in the post-verbal position.

(55) a. *Amicaáca*   *Ima*   <u>*iína =jinacuma*</u> *maqu~~i~~-r~~ii~~-ø*   *iíta.*
         one.day.away Ema   DET =inside   sleep-MMT.PRF-E.C.TENSE house
         'Tomorrow Ema will sleep inside that house.'

      b. *Ima*   *maquii-ø*   <u>*iína =jinacuma iíta.*</u>
         Ema   sleep.IMPF-E.C.TENSE   DET =inside   house
         'Ema is sleeping inside that house.'

As we saw with both object NPs and possessive phrases that included determiners, it is ungrammatical for postpositional complements that include a determiner and an associated noun to appear in their entirety in the irrealis position, as evident in (56).

(56) **Amicaáca*   *quí=*   <u>*iína =jinacúma iíta*</u>   *maqu~~i~~-r~~ii~~-ø.*
       one.day.away   1S=   DET =inside   house   sleep-MMT.PRF-E.C.TENSE
       TARGET: 'Tomorrow I am going to sleep inside the house.'

Having examined the behavior of determiners in irrealis constructions, we now wish to account for their somewhat unexpected behavior. Determiners are typically treated as forming constituents with their associated nouns, whether they are considered the head of that constituent or a nominal modifier (see Lyons [1999: Ch. 8] and Matthews [2007] for discussions of both approaches). In the Iquito irrealis construction, however, we encounter behavior that indicates that the Iquito determiner exhibits a looser relationship with its associated noun, being related neither as head nor dependent to it.

This looser relationship is evident when we consider, for example, the behavior of object NPs which include determiners, as described at the start of this section. Were Iquito determiners heads of constituents that included their associated nouns (that is, DPs), then we would expect that in irrealis constructions, the entire DP would appear in the irrealis position, since that would be the smallest

phrasal constituent that includes the determiner. Yet the determiner appears alone in the irrealis position in this case. Similarly, were Iquito determiners dependent on their associated nouns in NPs, we would likewise expect the entire NP to appear in the irrealis position, since as the immediately post-verbal element in the corresponding irrealis clause, the determiner would be required to appear in the irrealis position with its associated head, the noun. Since this does not occur, we conclude that although the Iquito determiner and noun form a constituent,[11] the relationship between them is a loose relationship of quasi-apposition, rather than a head-dependent relationship.

We hypothesize that this loose relationship is a consequence of the incomplete grammaticalization of modern Iquito determiners from the demonstrative pronouns with which they are still homophonous. The behavior of Iquito determiners is consistent with an intermediate degree of grammaticalization between apposite demonstrative pronouns and fully grammaticalized determiners, in that they form constituents with their associated nouns, but have not yet grammaticalized into a canonical head-dependent relationship with their associated nouns. We posit that an earlier stage of this grammaticalization process is preserved in the irrealis construction – a stage in which the grammaticalizing determiners/demonstrative pronouns and their associated nouns were still freely separable from one another, with the determiner filling the irrealis position as if it were a nominal argument (e.g. 'the one'), and the referential noun following the verb as an elaboration on the reference of the grammaticalizing determiner/demonstrative pronoun. Although a thorough evaluation of this grammaticalization account of the behavior of modern Iquito determiners is beyond the scope of the present paper, it should be noted that it has the virtue of relying on the well-attested grammaticalization trajectory leading from demonstrative pronouns to determiners (e.g. Diessel 1999; Lyons 1999) and fits well with empirical facts.

5.3.7. Single phrasal constituent restriction for the irrealis position

Up to this point, we have shown that there are multiple types of phrasal constituents that can appear in the irrealis position of an Iquito irrealis clause. In addition, due to multiple ordering possibilities for post-verbal constituents in corresponding realis clauses, a variety of phrasal constituents may be candidates for the irrealis position in a given irrealis construction. However, in any given sentence only one of the eligible elements may appear in the irrealis position of a given irrealis clause. Thus,

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[11]Evidence that the determiner and noun form a constituent includes the facts that their relative order is fixed, they cannot be freely separated from one another, they dislocate together to topic and focus positions, and that they are substituted as a whole by pronominal elements.

for example, as shown in (57), either an adverb or an object NP may appear in the irrealis position, due to the fact that adverbs and objects are freely ordered with respect to each other in realis clauses, but as shown in (58), these two elements are prohibited from occurring *together* in the irrealis position.

(57) a. *Amicaáca   icuáni nu-náana jimata-rɨɨ-ø   iyarácata.*
          One.day.away man   3S-tree   remove-MMT.PRF-E.C.TENSE rapidly
          'Tomorrow a man will remove his timber rapidly.'

      b. *Iína   icuáni nu= iyarácata jimata-rɨɨ-ø   nu-náana.*
          DET   man   3S= rapidly   remove-MMT.PRF-E.C.TENSE 3S-tree
          'That man, he will remove his timber rapidly.'

(58) a. **Iína   icuáni nu= nu-náana iyarácata jimata-rɨɨ-ø.*
          DET   man   3S= 3S-tree   rapidly   remove-MMT.PRF-E.C.TENSE
          TARGET: 'That man, he will remove his timber rapidly.'

      b. **Iína   icuáni nu= iyarácata nu-náana jimata-rɨɨ-ø.*
          DET   man   3S= rapidly   3S-tree   remove-MMT.PRF-E.C.TENSE
          TARGET: 'That man, he will remove his timber rapidly.'

Note that this behavior follows directly from the generalization given in Section 5.3, since only one of the eligible element types actually occupies the immediately postverbal position in the corresponding realis clause, and only this single phrasal constituent appears in the irrealis position of the corresponding irrealis clause.

To be clear, the generalization also holds for elements that are of the same type, such as, for example, two object NPs of a ditransitive verb; either the direct object or the indirect object of a ditransitive verb can occur in the irrealis position, but not both. The object that does not occur in the irrealis position follows the verb, as shown in (23), (24), and (47).

6. Phonological gapping in intransitive irrealis constructions

The irrealis construction requires a suitable element to occupy the irrealis position between the subject and the verb to distinguish it from its realis counterpart. When no such element is available, the word order distinction between the realis and irrealis constructions is neutralized. Nevertheless, in some cases, the irrealis construction may still be distinguished from its realis counterpart by its phonological behavior.

In realis clauses, subject person markers form a phonological word with the verb, resulting in underlying vowel hiatus with vowel-initial verbs, as in (59), which exhibits /ɨi:/ vowel hiatus. In realis contexts, instances of vowel hiatus like this one are typically resolved by deleting and/or altering the quality of one of the vowels involved in the vowel hiatus. The vowel hiatus in the form *pɨ=iícuaa* in (59), for example, is resolved by lengthening the vowel of the prefix and deleting the stem-initial vowel, such that /ɨi:/ becomes [ɨ:].

(59) [pɨ:kʷaki]

     Pɨ=   *iícua-qui-ø.*
     1PL.INCL= go-PERF-E.C.TENSE
     'We went.'

In irrealis clauses where no element is available to occupy the irrealis position, cases of vowel hiatus that are underlyingly identical to those found in the corresponding realis clauses may arise. In these irrealis contexts, however, the vowel hiatus resolution processes operative in realis contexts may be blocked, resulting in a surface irrealis form that is still distinguishable from its realis counterpart. The underlying form in (60), for example, exhibits the same /ɨi:/ vowel hiatus as (59). However, the surface form of (60) preserves the vowel hiatus, rather than resolving it, indicating that normal vowel hiatus resolution patterns are blocked in this type of irrealis construction.

(60) [pɨi:kʷaki]

     Pɨ=   *iícua-qui-ø.*
     1PL.INCL= go-PERF-E.C.TENSE
     'We will go.'

Given that vowel hiatus resolution is blocked only in cases in which an empty irrealis position appears between the subject person marker and the verb, we analyze this blocking effect as a consequence of the unfilled irrealis position. Presumably the formation of phonological words is impeded across the empty syntactic position, so that phonological word-internal vowel hiatus does not occur, and consequently, the triggering environment for the vowel-hiatus resolution process does not occur. This blocking effect is dependent on speech rate, however, with vowel hiatus resolution blocking occurring only in careful speech.

7. Word order and inflectional categories in cross-linguistic perspective

In this paper we have demonstrated that in Iquito, contrasting feature values of an inflectional category, namely reality status, are expressed by word order alternations alone. This result is typologically significant because it constitutes a clear example of a grammatical category solidly within the core inflectional TAM domain being expressed solely by a word order alternation. In this section we discuss phenomena in other languages that resemble the formal expression of reality status in Iquito, in that they involve correlations between word order and grammatical meanings that fall in (or near) notional domains associated with inflection. While none of these phenomena demonstrate the expression of an inflectional category via word order as clearly as Iquito reality status marking does, they add weight to the conclusion that the set of inflectional formatives recognized by typologists needs to be broadened to include word order alternations.

One of the well-known ways in which word order alternations play a role in the expression of a grammatical category that might be considered inflectional is in the expression of sentential mood. In English, for example, polar interrogatives and their declarative counterparts are distinguished in part by subject-auxiliary inversion, which involves alternations between S Aux V order in declarative clauses and Aux S V in interrogatives. Nonetheless, there are a number of ways in which English auxiliary inversion does not tidily exemplify a word order alternation as the exponent of an inflectional category. For example, the interrogative counterparts of declarative sentences that lack an auxiliary exhibit *do*-insertion, so that for many sentences the formal relationship between declarative and interrogative mood does not consist solely of a word order alternation. Moreover, even in declarative/interrogative sentence pairs that do exhibit auxiliaries, the word order alternation co-occurs with the rising intonation characteristic of English interrogatives clauses. Interrogative sentential mood in English is thus never indicated by word order alone. It is also worth mentioning that sentential mood is often not treated as a core inflectional category, as evidenced by the fact that a number of overviews of inflection ignore it entirely (e.g. Bickel and Nichols 2007; Stump 1998; Payne 1997: 233-248) or give it short shrift (Palmer 2001). Regardless of the ultimate merit of treating sentential mood as a peripheral inflectional category, the marginal status of this category suggests that sentential mood phenomena may not be the best grounds on which to build a case for

extending our understanding of inflectional formatives to include word order.

Another well-known correlation between word order and clause type involves verb second (V2) phenomena in many Germanic languages, in which the position of the verb in the clause corresponds to clause type: verbs appear in second position in main clauses, but appear in final position in subordinate clauses. This word order alternation can thus be seen as parallel to the distinction between indicative and subjunctive moods in languages where these two moods are expressed by inflectional morphology (see, e.g. Wechsler [1991], which discusses the non-assertive status of V2 clauses). True subjunctives, however, typically do not serve solely to mark subordinate clauses, but also serve to express non-assertive moods in main clauses, such as the jussive, volitive, and speculative moods (Palmer 2001: 108-111). The Germanic V2/verb-final alternation thus seems to mainly constitute a difference between main clause and subordinate clause word order, and its status as the exponence of an inflectional category is doubtful.

Several West African languages exhibit a word order alternation associated with sentence polarity, in which affirmative sentences exhibit SVO order and negative sentences exhibit SOV. While these alternations are not expressions of an inflectional category *per se*, they do convey clause-level grammatical meanings that are typically expressed by bound morphology or free functional elements. As in the case of English interrogative auxiliary inversion, however, the word order alternations in question are accompanied by other forms of marking, in particular tone, which is a common means of marking negation in this region. A polarity-based alternation of this type is exemplified by a pair of sentences from Leggbó (Niger-Congo; Nigeria): the positive polarity sentence, (61a), exhibits SVO order, while the negative sentence, (61b), exhibits SOV order, and a shift from mid to low tone is evident on the verbal subject agreement prefix.[12]

(61) a. *Wàdum sɛ́ e-dzi lídzil.*
         man   the 3S-eat food
         'The man ate food.' (Good 2003: 111)

      b. *Wàdum sɛ́ lídzil eè-dzi.*
         man   the food 3S.NEG-eat
         'The man didn't eat food.' (Good 2003: 112)

Kwaa (Niger-Congo; Liberia) exhibits a similar alternation, where positive polarity sentences, as in (62a), exhibit SVO order and negative polarity sentences, as in (62b), exhibit SOV order,

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[12]The vowel is also lengthened in the negative example, but Good considers tone to be the salient feature of negation, not vowel lengthening (p.c., July 2008).

accompanied by a shift in tone (in this example, from low to high) on the syntactically free object.

(62) a. *Mà   tíbá   wɔ̀.*
          1S   hit   3S
          'I hit him.'

      b. *Mà   wɔ́   tíbá.*
          1S   3S   hit
          'I didn't hit him.' (Welmers 1973: 412)

Both the Leggbó and Kwaa word order alternations are associated with changes in clause-level grammatical meaning, much like Iquito reality status alternations. However, the Leggbó and Kwaa word order alternations more closely resemble English auxiliary inversion, in that the word order alternation is only one formal component of a construction that marks the relevant notional contrast, and is not the sole formal means for indicating the contrast.

Tikar (Benue-Congo; Cameroon) exhibits a word order alternation associated with progressive versus habitual readings of an imperfective marker (Stanley 1986: 114). The alternation is restricted to semi-intransitive verbs (intransitive verbs that take a locative complement), where sentences with post-verbal locative NPs are interpreted as having habitual aspect, as in (63a), while those with pre-verbal locative NPs are interpreted as having progressive aspect, as in (63b). Note, however, that the form of the verb is different in (63b), suggesting the presence of a verbal suffix.[13] If this analysis is correct, then the Tikar word order alternation resembles those already discussed in constituting part of the formal realization of an inflectional or grammatical category. The Tikar habitual/progressive alternation does not appear to be operative in transitive constructions, as evidenced by (64), which exhibits both habitual and progressive readings, depending on the context, nor does it appear to be operative in intransitive constructions that do not take a locative complement.

(63) a. *à   tă   kɛ̀n   fumban*
          3S   IMPF.NPST   leave   Foumban
          'He is in the habit of leaving for Foumban.'

      b. *à   tă   fumban   kɛ̀nni*
          3S   IMPF.NPST   Foumban   leave
          'He is in the process of leaving for Foumban.' (Stanley 1986: 114)

(64) *à   tă   hwum   ɓo*
      3S   IMPF.NPST   drum   beat

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[13]Stanley (1986) does not comment on the difference in the form of the verb.

'He is in the process of beating the drum' or 'He (habitually) beats the drum.' (Stanley 1986: 115)

The next case we examine, the expression of definiteness in Puare (Macro-Skou; North-Central New Guinea) appears to resemble Iquito reality status marking in important respects. In Puare, object NPs are interpreted as indefinite when post-verbal, as in (65a), and as definite when pre-verbal, as in (65b).

(65)   a. *N-aeḷe   n-uaḷa   ḷku.*
            1S-go   1S-search.for   egg
            'I went to look for eggs.'

       b. *N-aeḷe   ḷku   n-uaḷa.*
            1S-go   egg   1S-search.for
            'I went to look for the egg.' (Donohue 2008: 39)

In these examples, position relative to the verb serves as the sole means for distinguishing the definiteness of the object. It is also possible, however, to express definiteness overtly with a demonstrative, as in (66). Verb-object order is thus not the sole indicator of definiteness in all cases. Interestingly, when there is an overt demonstrative with the object, only SOV order is allowed (66a); SVO order is ungrammatical because the object is definite (66b).

(66)   a. *N-aeḷe   ḷku   pende   n-uaḷa.*
            1S-go   egg   that   1S-search.for
            'I went to look for that egg.'

       b. **N-aeḷe   n-uaḷa   ḷku   pende.*
            1S-go   1S-search.for   egg   that
            (Donohue 2008: 39)

Finally, any discussion of the overlap between inflectional categories and word order would not be complete without mention of the fact that both case and NP position relative to the verb can serve to indicate grammatical relations between nouns and their associated verbs. Since case is typically considered a core inflectional category (see, e.g. Bickel and Nichols 2007), and since word order fills the functional role of case in many languages that lack case, this could be interpreted as an instance of word order expressing an inflectional category. The fact that it traditionally has not been so regarded may reflect an assumption that the functional overlap between word order and morphological marking of grammatical relations is an isolated case, rather than part of a broader

phenomenon of word order functioning as an inflectional formative. Iquito reality status marking, however, demonstrates that word order can also serve to mark a grammatical category in the core domain of TAM, inviting us to see the use of word order to mark grammatical relations as part of a wider phenomenon.

In this section we have discussed a number of phenomena that exhibit formal similarities to the marking of reality status in Iquito via word order. We have observed that one of these phenomena, the German V2/verb-final alternation, does not express an inflectional category, while others, such as English interrogative auxiliary inversion and the Tikar progressive/habitual alternation, employ word order alternations as only part of the formal realization of the inflectional alternation in question. The Puare definiteness alternation and the use of word order to express grammatical relations between nouns and their associated verbs, however, are phenomena that, together with reality status marking in Iquito, suggest that the set of formal mechanisms recognized by typologists to express inflectional categories should be broadened to include word order alternations.

8.   Conclusion

We have shown that in Iquito, a distinction between realis and irrealis clauses is expressed solely by means of a word order alternation. This alternation arises from the word order differences between two constructions that serve to express two contrasting reality status values: 1) an SVX construction that expresses realis, in which no element intervenes between the verb and its subject, and 2) an SXV construction that expresses irrealis, where X is a phrasal constituent that appears between the subject and verb (providing that one is available). The elements that appear in the irrealis position between the subject and verb in irrealis constructions correspond to the smallest phrasal constituent that includes the immediately post-verbal word in the corresponding realis clause, and if it is a dependent element in a head-dependent pair, its associated head.

The Iquito reality status word order alternation thus constitutes an unambiguous case of an inflectional category within the core notional domain of TAM that is marked solely by word order, suggesting that the typological repertoire of inflectional formatives recognized by typologists must be broadened to include word order. At this point, Iquito appears to be the only attested language that exploits word order alone to express a TAM category, although Puare, discussed above, appears to exploit word order to express definiteness, an inflectional category with scope over the noun phrase.

We expect that future research will clarify the ways in which other languages exploit word order alone to express other inflectional categories.

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10.   Acknowledgements

11.   Abbreviations

1S = first person singular

1PL = first person plural

2S = second person singular

3S = third person singular

3PL = third person plural

ABL = ablative

ADVR = adversative

AN = animate

BEN = benefactive

CF = counterfactual

COP = copula

DEI = deictic perfective

DET = determiner

DIM = diminutive

E.C.TENSE = extended current tense

EXCL = exclusive

FOC = focus

FUT = future

IMPF = imperfective

INAN = inanimate

INCL = inclusive

INF = infinitive

LOC = locative

MMT.PRF = momentary perfective

NEG = negation

NOM = nominalizer

NPST = non-past

NASRT = non-assertive

PERF = perfective

PL = plural

POT = potential

REC.PST = recent past

REL = relative pronoun

REM.PRF = remote perfective

RPST = remote past

TOP = topic

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Irrealis Order	Realis Order
INTRANSITIVE VERBS	
S [Adverb] V S [Postpositional phrase] V S [Determiner and postposition of PP] V [Noun of PP]	S V [Adverb] S V [Postpositional phrase] S V [Determiner, postposition, and noun of PP]
TRANSITIVE VERBS	
S O V S [Determiner of Object NP] V [Noun of Object NP] S [Determiner$_i$] V [Possessor Possessum$_i$] S [Determiner$_i$ Possessum] V [Possessor$_i$] S [Adverb] V O S [Postpositional phrase] V O S [Determiner and postposition of PP] V [Noun of PP] O S [Negation] V-ji O	S V O S V [Determiner and noun of Object NP] S V [Determiner$_i$ Possessum Possessor$_i$] S V [Determiner$_i$ Possessum Possessor$_i$] S V [Adverb] O S V [Postpositional phrase] O S V [Determiner, postposition, and noun of PP] O S V-ji [Negation] O
DITRANSITIVE VERBS	
S [IO] V DO S [DO] V IO S [Determiner of DO NP] V [Noun of DO NP] IO S [Determiner of IO NP] V [Noun of IO NP] DO	S V [IO] DO S V [DO] IO S V [Determiner and noun of DO NP] IO S V [Determiner and noun of IO NP] DO

Table 1: Elements found in the irrealis position and their realis counterparts