elpublishing

Language Documentation and Description

ISSN 1740-6234

This article appears in: *Language Documentation and Description, vol 10: Special Issue on Humanities of the lesser-known: New directions in the description, documentation and typology of endangered languages and musics*. Editors: Niclas Burenhult, Arthur Holmer, Anastasia Karlsson, Håkan Lundström & Jan-Olof Svantesson

Exploiting syntax to circumvent morphology: word order as a means for marking grammatical categories

CYNTHIA I. A. HANSEN

Cite this article: Cynthia I. A. Hansen (2012). Exploiting syntax to circumvent morphology: word order as a means for marking grammatical categories. In Niclas Burenhult, Arthur Holmer, Anastasia Karlsson, Håkan Lundström & Jan-Olof Svantesson (eds) *Language Documentation and Description, vol 10: Special Issue on Humanities of the lesser-known: New directions in the description, documentation and typology of endangered languages and musics*. London: SOAS. pp. 288-306

Link to this article: http://www.elpublishing.org/PID/123

This electronic version first published: July 2014

Exploiting syntax to circumvent morphology: word order as a means for marking grammatical categories

Cynthia I. A. Hansen

1. Introduction

The linear word order of sentential elements is exploited for several purposes. The position of an element with respect to the verb can convey its relationship to the verb (i.e. whether it is a subject or an object, or argument structure) or its relationship to the clause (i.e. whether the information is old or new, or information structure). In addition, there are a few grammatical properties that can be conveyed by the exploitation of linear word order, although there has not been much discussion of these properties in the literature. Thompson (1978: 24) claims that:

> With more typological research, it should eventually be possible not only to specify what grammatical properties can and cannot be signaled by the order of predicates and their arguments, but perhaps also to explain why certain properties are signaled in this way. But we are rather far from that goal at the present time.

This paper serves to move closer to the goal outlined by Thompson by delineating the types of grammatical properties that are signalled by word order other than information structure and argument structure. It looks first at a typologically unusual word order alternation found in Iquito, a highly endangered Zaparoan language of the Peruvian Amazon, which uses word order to mark the reality status of a clause. It then situates the Iquito reality status word order alternation within a larger typology of word order alternations by presenting several other examples of grammatical categories that are expressed via word order alternations: negation in several West African languages, progressive aspect in Tikar (Benue-Congo; Cameroon) and Kokama-Kokamilla (Tupí-Guaraní; Peru, Brazil, Colombia), and definiteness in Puare (Macro-Skou; New Guinea) and K'iche' (Mayan; Guatemala). It concludes by proposing that what unifies these grammatical categories is that they all occur on Hopper & Thompson's (1980) Transitivity Scale, and that this scale can be used as a predictive measure for finding other word order alternations in future research.

The examples presented in this paper come from languages without case-marking that otherwise have relatively fixed word orders. The primary goal is

Cynthia I. A. Hansen 2011. Exploiting syntax to circumvent morphology: word order as a means for marking grammatical categories. In Jan-Olof Svantesson, Niclas Burenhult, Arthur Holmer, Anastasia Karlsson and Håkan Lundström (eds.) *Language Documentation and Description*, *Vol 10,* 288-306. London: SOAS.

to identify 'ideal' cases where the word order alternation is the sole indicator of the grammatical category. This task is easier in languages where word order is quite fixed and less susceptible to other factors such as information structure.

Descriptions of word order alternations that convey grammatical categories are scattered throughout the literature, but no comprehensive list exists (cf. Payne (1993) who lists a few, Donohue (2008) who lists a few as examples of what he is not talking about, and Güldemann (2007) who lists examples in West African languages). Therefore, in pulling together these examples, this paper presents a survey of word order alternations that does not currently exist in the typological literature. Furthermore, this paper demonstrates that the alternation found in Iquito, while typologically quite rare, can be considered an example of an 'ideal' word order alternation, since it is not accompanied by any additional phonological, morphological, or suprasegmental marking, and because the distribution of the alternation is pervasive throughout the language.

2. Background on Iquito

Iquito is one of three remaining languages of the Zaparoan family along with Arabela (about 75 speakers) and Záparo (less than 10 speakers). It is spoken in the northern Peruvian Amazon region by about 25 elderly speakers, most of whom live in the community of San Antonio de Pintuyacu, which is located about 120km west of the city of Iquitos in the Peruvian state of Loreto. Like many of the other languages spoken in this region, including the other members of the Zaparoan language family, Iquito is on the verge of becoming extinct. In response to this moribund status, the Iquito Language Documentation Project (ILDP) was established in 2002 as a collaborative effort between members of the community of San Antonio and linguists from The University of Texas at Austin as well as the Universidad Nacional Mayor de San Marcos in Lima, Peru.[1] The Iquito data presented in this paper is the result of fieldwork conducted by the author as a member of this project since 2004.

[1] More information about this project can be found at http://www.cabeceras.org/indexiquito.html.

3. Word order and reality status in Iquito

Iquito exhibits nominative-accusative alignment, and grammatical relations between arguments and the verb are determined by the position of those arguments within the clause and not by case marking. Word order is thus fairly fixed and predictable. The basic word order is SVO (Lai 2009: 46), which can be seen in example (1) below.[2] OSV order is possible, but only when the object is focused. As we will see in this section, an alternative 'SXV' order is found in irrealis clauses; it is this order that functions to mark the clause as irrealis.

(1)	*Icuáni*	*asaa-Ø*	*pápaaja*	*maacuáarica.*
	man	eat.IMPF-E.C.TENSE	fish	slowly
	'(A) man eats fish slowly.'			

The expression of the irrealis and its counterpart, the realis, falls under the grammatical category of reality status (Elliott 2000, Mithun 1995, 1999). The realis denotes realized or actualized situations, such as past temporal reference, whereas the irrealis denotes unrealized, unactualized, or imagined situations, such as future temporal reference or counterfactual modality. In languages that overtly mark reality status, this marking is typically done through verbal morphology (Elliott 2000: 64). Iquito reality status, however, is expressed by an alternation between two constructions that are distinguished by the position of elements immediately adjacent to the verb. This alternation is described in detail by Beier et al. (2011) and summarized briefly here. The irrealis is expressed by a construction, in which an element occurs between the subject and the verb (SXV), as in (2). Whereas, the realis is expressed by a construction in which no element intervenes between them, and the subject and verb are immediately adjacent to one another (SVX), as in (3). (The intervening element can be an object, determiner, adverb, postpositional phrase, or negation particle, which is why 'X' is used rather than 'O'. See Hansen (2011) for a thorough discussion of these element types.)

[2] The abbreviations used in this paper are: DET = determiner, E.C.TENSE = extended current tense, IMPF = imperfective, INF = infinitive, LOC = locative, MMT.PRF = momentary perfective, NEG = negation, PERF = perfective, REL = relativizer, REM.PRF = remote perfective, SG = singular.

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

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

In minimal pairs, such as the pair given above in (2) and (3), all components of the sentence remain the same. There is no morphological difference between the two examples, nor does the interpretation of the arguments change. Nonetheless, there is a difference in meaning between the two sentences. Example (2), exhibiting SXV 'irrealis order', yields a future reading, while (3), exhibiting SVX 'realis order', yields a non-future reading. A similar minimal pair can be seen in (4) and (5) below.

(4) *Quia=* ***iína*** *raati-qui-Ø* *itíniija.* (SXV; irrealis)
2SG DET drink-PERF-E.C.TENSE manioc beer
'You will drink the manioc beer.'

(5) *Quia=* *raati-qui-Ø* ***iína*** *itíniija.* (SVX; realis)
2SG drink-PERF-E.C.TENSE DET manioc beer
'You drank the manioc beer.'

The reality status alternation occurs with other aspectual morphemes, such as the remote perfective illustrated by examples (6) and (7) and the momentary perfective illustrated by the near minimal pair in (8) and (9).

(6) *Nu=* ***núquiica*** ***simiímɨ*** *najuu-maa-Ø.* (SXV; irrealis)
3SG one letter write-REM.PRF-E.C.TENSE
'S/he will write a letter.' (Lai 2009: 340, example 674)

(7) *Nu=* *najuu-maa-Ø* ***núquiica*** ***simiímɨ.*** (SVX; realis)
3SG write-REM.PRF-E.C.TENSE one letter
'S/he wrote a letter (in the morning).' (Lai 2009: 330, example 638)

(8) *Amicaáca* *anuu=* ***naamɨ*** *nacusi-rɨ-Ø* *taniini.*
one.day.away 3SG leaves know-MMT.PRF-E.C.TENSE weave.INF
'S/he will know how to weave leaves.' (Lai 2009: 322-3, example 625)

(9) *Nu=* *nacusi-rɨ-Ø* ***naamɨ*** *taniini.*
3SG know-MMT.PRF-E.C.TENSE leaves weave.INF
'S/he now knows how to weave leaves.' (Lai 2009: 290, example 536)

Furthermore, the alternation occurs with verbs of all valencies: an example of the alternation with an intransitive verb can be seen in (10) and (11) and with a ditransitive verb in (12) and (13). Additional examples can be found in Hansen (2011) and Beier et al. (2011).

(10) *Quí-níyaaca* ***Iquito=jina*** *iícu-maa-Ø.*
1SG-husband Iquitos=LOC go-REM.PRF-E.C.TENSE
'My husband will go to Iquitos (in the distant future).'

(11) *Quí-níyaaca* *iíquii-Ø* ***Iquito=jina.***
1SG-husband live.IMPF-E.C.TENSE Iquitos=LOC
'My husband lives in Iquitos.'

(12) *Quí=* ***Jaime*** *masiitii-rii-Ø* *nuú.*
1SG= Jaime sell-MMT.PRF-E.C.TENSE 3SG
'I will sell it to Jaime.'

(13) *Quí=* *masiitii-Ø-cura* ***Jaime*** *nuú.*
1SG= sell-PERF-REC.PST Jaime 3SG
'I sold it to Jaime.'

In all of these examples, the change in order results in a change in meaning. The SXV clauses express an unrealized (irrealis) event, whereas the SVX clauses express a realized (realis) event. The alternation between the realis construction (SVX) and the irrealis construction (SXV) is the only distinction between realis and irrealis clauses; there is no additional marking that occurs in tandem with the change in word order to indicate the grammatical category. Word order is thus the sole indicator of a clause's reality status.

This fact, together with the fact that the alternation is found with various tense and aspect morphemes, as well as with verbs of all valencies, makes the Iquito reality status alternation an 'ideal' word order alternation because it is the only indicator of the grammatical category and is widespread in its distribution. In the next section, we will see that this alternation is typologically unusual; other word order alternations are more limited in their distribution or are accompanied by some sort of additional marking.

4. Grammatical categories correlated with word order

In this section, I present data from other languages that exhibit a word order alternation that conveys a grammatical category, looking at one other case of reality status and then turning to the categories of negation, aspect, and definiteness. Even though most of these latter alternations are accompanied by

some sort of additional marking within the clause, thereby distinguishing them from the Iquito reality status alternation, a word order alternation is still necessary for conveying the grammatical category.

4.1. Reality status

In addition to the word order alternation found in Iquito, there is one other attested case of reality status being expressed via a word order alternation. This alternation occurs in one dialect of Sasak, a Western Malayo-Polynesian language of the Austronesian family (Austin 1996). Ngeno-ngene Sasak has a set of pronominal clitics that optionally attach to the verb to mark the agent of the clause. With certain verbs, the position of these clitics determines whether the clause is interpreted as realis or irrealis. When the pronominal clitic is a proclitic, the clause is interpreted as irrealis, as in (14), and when it is an enclitic, the clause is interpreted as realis, as in (15).[3] (In these examples, the pronominal clitic is the first person singular *ku*.)

(14) *Balé* ***ku***=*beli*. (proclitic; irrealis)
house 1SG=buy
'I want to/will buy a house.' (Austin 1996: 7, example 9)

(15) *Balé* *beli-ng*=***ku***. (enclitic; realis)
house buy-LINK=1SG
'I have bought a house.' (Austin 1996: 8, example 10)

A near minimal pair is given in the relative clauses presented in (16) and (17) below. Again, when the pronominal clitic is a proclitic, the clause is interpreted as irrealis, as in (16), and when it is an enclitic, the clause is interpreted as realis, as in (17).

(16) *Buku* *si* ***mèq***=*beli* *inó* (proclitic; irrealis)
book REL 2SG=buy that
'That book which you intend to buy.' (Austin 1996: 13, example 36)

(17) *Buku* *si* *beli-n*=***ne*** *inó* (enclitic; realis)
book REL buy-LINK=3SG that
'That book which he bought.' (Austin 1996: 14, example 37)

---

[3] The *-ng* in (15) is the result of a phonological process and not a marker of reality status. Austin (1996:fn 5) explains that 'when the root ends in a vowel[,] a homorganic nasal appears before the enclitic'. The nasal is glossed here as LINK and can also be seen in example (17).

The Sasak reality status alternation is, however, more restricted than what we see in Iquito. It only occurs with two-place (i.e. transitive) 'zero' verbs,[4] whereas in Iquito, the alternation occurs with all valencies. Additionally, Ngeno-ngene Sasak clauses are not obligatorily marked for reality status. The pronominal clitics optionally attach to the verb, and reality status is not marked with two-place nasal verbs, one-place verbs, or in clauses without a pronominal clitic, and other dialects of Sasak do not show this pattern (P. Austin, personal communication, January 2011). This is a significant difference from Iquito, which does exhibit obligatory reality status marking. Nonetheless, the existence of the Sasak alternation suggests that the alternation found in Iquito may not be an anomaly.

4.2. Negation

Several West African languages exhibit a word order alternation associated with the expression of negation. In these languages, affirmative sentences exhibit SVO order and negative sentences exhibit SOV order. They are thus comparable in form to the alternation found in Iquito, in that a particular order correlates with a particular sentence meaning. However, all of these alternations are accompanied by some sort of negation marking in addition to the change in word order. As a result, these word order alternations differ from Iquito, in that they are not the *sole* expression of negation in these languages, but rather one component of the way negation is marked.

Leggbó (Niger-Congo; Nigeria) is one of the languages that exhibits this type of alternation, as evidenced by examples (18) and (19). Here, as in several other West African languages, the overt marking is a change in tone, which is a common means of marking negation in this region (J. Good, personal communication, July 2008; see also Ndimele 2009 and Vydrine 2009). In examples (18) and (19), the change in tone occurs on the third person singular prefix; in the affirmative example in (18), this prefix carries a mid-tone, and in the negative example in (19), it carries a low tone.[5]

[4] Sasak verbs are categorized as one-place (intransitive) or two-place (transitive), and two-place verbs are further divided into zero-verbs or nasal verbs. Nasal verbs differ from zero verbs in that they bear a nasal prefix, realized as either a homorganic nasal or as the velar nasal *ng*, depending on phonological context (Austin 1996: 6).

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

(18) *Wàdum* *sɛ́* ***e-dzi*** *lídzil* (SVO; affirmative)
man the 3SG-eat food
'The man ate food.' (Good 2003: 111, example 1a)

(19) *Wàdum* *sɛ́* *lídzil* ***eè-dzi*** (SOV; negative)
man the food 3SG.NEG-eat
'The man didn't eat food.' (Good 2003: 112, example 2)

Kwaa (Niger-Congo; Liberia) exhibits a similar alternation. Affirmative sentences are SVO, as can be seen in example (20), and negative sentences are SOV, as can be seen in example (21). The word order alternation in Kwaa is also accompanied by a change in tone, mirroring what we saw with Leggbó, except that the change is marked on the object rather than on the verbal prefix. The post-verbal object in (20) has a low tone, whereas the pre-verbal object in (21) has a high tone.

(20) *Mà* *tíbá* ***wɔ̀*** (SVO; affirmative)
1SG hit 3SG
'I hit him.' (Welmers 1973: 412)

(21) *Mà* ***wɔ́*** *tíbá* (SOV; negative)
1SG 3SG hit
'I didn't hit him.' (Welmers 1973: 412)

In other West African languages, the word order alternation is accompanied by a negative morpheme as well as a change in tone. For example, in Bafut (Bantoid, Grassfields), the affirmative sentence, given in (22), has SVO order and a high tone on the verb. The negative sentence, given in (23), has SOV order, mid tone on the verb, and two negation morphemes, one before the subject and one before the pre-verbal object.

(22) *Sùù* *kì* ***kó*** *mbà*
Suh TENSE/ASPECT catch animal
'Suh killed an animal.'
(Chumbow & Tamanji 1994: 224,
cited in Güldemann 2007: 7, example 12a)

(23) *kāā* *Sùù* *kì* *wā'à* *mbà* ***kō***
NEG Suh TENSE/ASPECT NEG animal catch
'Suh did not kill an animal.'
(Chumbow and Tamanji 1994: 224,
cited in Güldemann 2007: 7, example 12b)

Güldemann (2007) lists the following West African languages as also exhibiting a word order alternation correlated with the expression of negation: Vute (Bantoid), Lokaa (Upper Cross), Nweh (Bantoid, Grassfields), and Mbili (Bantoid, Grassfields). In these languages, as in the other West African languages presented in this section, the object (or objects) precede the verb in negative clauses and follow the verb in affirmative clauses. Word order is thus necessary for conveying the expression of negation in these languages, but it is not the sole indicator of the category, as it is in Iquito.

4.3. Aspect

There are two attested cases of aspect being expressed by a word order alternation: Tikar (Benue-Congo; Cameroon) and Kokama-Kokamilla (Tupí; Peru, Brazil, Colombia).

Tikar, a Benue-Congo language spoken in Cameroon, exhibits a word order alternation that distinguishes between progressive and habitual aspect (Stanley 1986: 114). This alternation only occurs with intransitive verbs that take a locative complement. When the locative complement follows the verb, as in (24), the clause has a habitual reading, and when the locative complement precedes the verb, as in (25), the clause has a progressive reading. The verbs in both of these examples are marked with the imperfective non-past, but Stanley (1986: 114) notes that the same changes occur throughout the imperfective.

(24) *à* *ta* *kɛ̀n* ***fumban*** (SVLoc; habitual)
3SG IMPF.NPST leave Foumban
'He is in the habit of leaving for Foumban.'
(Stanley 1986: 114, example 500)

(25) *à* *ta* ***fumban*** *kɛ̀nni* (SLocV; progressive)
3SG IMPF.NPST Foumban leave
'He is in the process of leaving for Foumban.'
(Stanley 1986: 114, example 500)

Transitive verbs do not participate in the word order alternation. For example, the transitive sentence in (26) has SOV order. On analogy with the locative examples in (24) and (25), we might expect this sentence to have a progressive reading, but in fact, it has both a habitual reading and an in-process reading, which is disambiguated by context and not by a word order alternation.

(26)

à	*ta*	*hwum*	*ɓo*
3SG	IMPF.NPST	drum	beat

'He is in the process of beating the drum' or
'He (habitually) beats the drum.'

(Stanley 1986: 115, example 501)

The limited context and distribution of this alternation differentiates it significantly from the Iquito alternation, since the Iquito alternation occurs with all complement types and valencies, not just with locative complements of intransitive verbs. Furthermore, there is an additional marker on the verb (*-ni*) in the progressive example in (25) that may also convey the progressive reading in Tikar. Stanley (1986: 462–464) describes this suffix as an allomorph of the imperfective marker, but it is possible that it serves to further disambiguate the progressive from the habitual since it is absent from the ambiguous transitive sentence in (26). Unfortunately, the examples that Stanley provides, in which this marker is present, all include verbs with object complements and not semi-intransitive verbs. The intransitive counterparts do not have this morpheme. If *-ni* was some sort of progressive marker in intransitive clauses, then this word order alternation is further distinguished from the Iquito alternation by having additional morphology that occurs in conjunction with the alternation.

Another example of word order correlating with the progressive aspect can be found in Kokama-Kokamilla, a Tupí language spoken in the Peruvian Amazon as well as by a few small groups in Brazil and Colombia. Word order in this language is conditioned by tense-aspect marking, particularly whether or not the verb is marked with a progressive aspect marker (Vallejos 2004: 45; see also Vallejos 2010).

Tense-marking on the verb is discourse dependent and not obligatory, but progressive aspect is obligatorily marked by the suffix *-ri*. In clauses marked for tense (either explicitly with a VP enclitic or implicitly via discourse context) but not marked for the progressive, the most frequent word order is SVO with the tense enclitic following the object, an example of which can be seen in (27). In clauses with the progressive marker, which is always marked on the verb, the most frequent word order is SOV, as shown in (28).

(27) *mijiri* *kurata* *uni=uy* (SVO)
Miguel drink water=PST
'Miguel drank water.' (Vallejos 2004: 46, example 42a)

(28) *mijiri* *uni* *kurata-ri* (SOV)
Miguel water drink-PROG
'Miguel is drinking water.' (Vallejos 2004: 47, example 44a)

It is ungrammatical for a tense-marked clause to exhibit SOV order, as in (29) and is questionable as to whether a progressive-marked clause can exhibit SVO order (the order is unattested in texts, but accepted by some speakers in elicitation), as in (30). The examples in (29) and (30), in tandem with the examples in (27) and (28), show that the order that is possible in tense-marked clauses is ungrammatical (or at least questionable) in progressive-marked clauses and vice versa.

(29) **mijiri* *uni* *kurata=uy* (*SOV)
Miguel water drink=PST
TARGET: 'Miguel drank water.' (Vallejos 2004: 46, example 42c)

(30) ?*mijiri* *kurata-ri* *uni* (?SVO)
Miguel drink-PROG water
TARGET: 'Miguel is drinking water.' (Vallejos 2004: 47, example 44c)

Focus is expressed via object fronting, and the alternation persists in these types of constructions. In tense-marked clauses, the order is OSV, with the tense enclitic following the verb, as in (31). In progressive-marked clauses, the order is OVS, as in (32).

(31) *uni* *mijiri* *kurata=uy* (OSV)
water Miguel drink=PST
'Miguel drank water.' (Vallejos 2004: 46, example 42b)

(32) *uni* *kurata-ri* *mijiri* (OVS)
water drink-PROG Miguel
'Miguel is drinking water.' (Vallejos 2004: 47, example 44b)

When both tense and progressive aspect are marked within the clause, the two orders possible in tense-marked clauses (SVO and OSV) and the two orders possible in progressive-marked clauses (SOV and OVS) are all possible. Thus, the alternation only occurs between clauses that are marked for tense alone and clauses that are marked for the progressive alone.

This alternation differs from the Iquito alternation in that there are overt markers of tense and aspect that co-occur with the word order alternation, and so word order is not the sole mechanism for indicating the grammatical category. It also varies significantly from the other alternations presented in this section because of the variable orders possible. However, it is still worthy of note because of its geographical proximity to Iquito. The data from Kokama-Kokamilla also suggests that languages described as having 'free' word order might in fact be subject to constraints.

4.4. Definiteness

Definiteness is another category that can be expressed via a word order alternation. While definite effects are widespread throughout the world's languages and contribute to word order phenomena in a variety of ways, there are a few examples that closely align with the alternation we see in Iquito. In this section, I present data from two languages that exhibit a word order alternation associated with definiteness: Puare (Macro-Skou; New Guinea) and K'iche' (Mayan; Guatemala).

Other than the reality status alternations we saw in Iquito and Sasak, Puare, a Macro-Skou language from north-central New Guinea, is the closest candidate to an ideal word order alternation. As with many of the other examples presented in this paper, this word order alternation involves the positioning of the object with respect to the verb. SOV is the dominant clausal order, but SVO order is found with objects that are indefinite or nonspecific (Donohue 2008: 39). For example, the two sentences in (33) and (34) have identical components, but the definiteness reading of the object depends on whether it precedes or follows the verb. In (33), *ɭku* 'egg' follows the verb and is interpreted as indefinite. In (34), *ɭku* 'egg' precedes the verb and is interpreted as definite. Thus, word order is used as a mechanism for conveying definiteness, and more specifically, the pre-verbal position is associated with a definite reading, whereas the post-verbal position is associated with an indefinite reading.

(33) *N-aeɭe* *n-uaɭa* ***ɭku***. (SVO; indefinite)
1SG-go 1SG-search.for egg
'I went to look for eggs.' (Donohue 2008: 39, example 57a)

(34) *N-aeɭe* ***ɭku*** *n-uaɭa.* (SOV; definite)
1SG-go egg 1SG-search.for
'I went to look for the egg.' (Donohue 2008: 39, example 57b)

This marking of definiteness via word order is very similar to the Iquito reality status alternation. Just as reality status is conveyed solely via word order in Iquito, the category of definiteness in Puare is being conveyed solely via word order in examples (33) and (34). However, it is possible to have an overt marker of definiteness accompanying the word order alternation as evidenced by example (35). Thus, the word order alternation is not the sole indicator of definiteness in all cases and therefore not identical to what we see with Iquito.

(35) *N-ae-le ɬku pende n-ua-la.*
1SG-go egg that 1SG-search.for
'I went to look for that egg.' (Donohue 2008: 39, example 57d)

That said, there is evidence to suggest that the post-verbal position is reserved solely for indefinite objects. Even when there is an overt demonstrative with the object, clearly marking it as definite, only SOV order is allowed, as can be seen in (35). SVO order is ungrammatical with these sentential elements, as shown in (36).

(36) **N-ae-le n-ua-la ɬku pende.*
1SG-go 1SG-search.for egg that
(Donohue 2008: 39, example 57c)

Several Mayan languages exhibit a word order preference similar to what is found in Puare. There are overt definiteness and indefiniteness markers, but word order correlates with the definiteness of the subject and object. England (1991: 464) states that 'the general rule is that VOS is used when the S is definite and the O indefinite, while VSO is used when both S and O are definite. Other possibilities (such as S indefinite and O definite or indefinite) are often not permitted or not permitted in any V-initial order'.

These orderings are evident in examples (37)–(40) from K'iche'. Both VSO and VOS are possible orders in this language, and both are permitted in basic word order contexts (England 1991: 454), but only one interpretation is allowed when overt markers of definiteness are used. When both arguments are definite (marked by *le*), as in (37), only the VSO interpretation is possible; VOS is ungrammatical. But when one argument is indefinite (marked by *jun*) and the other is definite, VSO is either ungrammatical or questionable. The order of constituents in (38) must be interpreted as VOS and not VSO because of the position of the definite argument. Reordering the elements, so that the definite argument immediately follows the verb, results in a questionable interpretation, as shown in (39). When both the subject and object are indefinite, neither VOS nor VSO is acceptable. The order is instead SVO, as shown in (40). These interpretations are complicated by the fact that indefinite

subjects are not allowed in verb-initial clauses, but they seem to indicate a preference for indefinite objects to occur immediately after the verb.

While word order is correlated with definiteness, it does not explicitly convey definiteness since overt markers of definiteness co-occur with the change in word order. Thus, this alternation differs from the Iquito alternation. It also differs from the other alternations presented so far because the alternation occurs between the subject and the object rather than between an argument and the verb.

(37) *xuq'aluj* *le achi* *le ala* (VSO)
hugged the man the youth *VOS
'The man hugged the youth.' (England 1991: 466, example 26b)

(38) *xuq'aluj* *jun achi* *le ala* (VOS)
hugged a man the youth *VSO
'The youth hugged a man.'(England 1991: 466, example 26d)

(39) ?*xuq'aluj* *le ala* *jun achi* (VSO)
hugged the youth a man *VOS
'The youth hugged a man.' (judged 'not very good')
(England 1991: 466, example 26e)

(40) *jun achi* *xuq'aluj* *jun ala* (SVO)
a man hugged a youth *VOS, *VSO
'A man hugged a youth.' (England 1991: 467, example 26i)

4.5. Summary

The examples that most closely resemble what is found in Iquito are reality status marking in Sasak, aspect marking in Tikar, and definiteness marking in Puare. However, the alternations in Sasak and Tikar are more limited in distribution than the Iquito alternation, only occurring with specific verb valencies or complement types. Puare, along with other alternations such as negation in several West African languages (Leggbó, Kwaa and Bafut), the progressive in Kokama-Kokamilla, and definiteness in K'iche' are accompanied by other markers of the grammatical category in addition to a change in word order. The Iquito word order alternation is not accompanied by additional tone or morphological marking and is not as restricted as other word order alternations, making it unique in the set of possible word order alternations associated with a meaning shift. It can also be characterized as an ideal alternation, since the change in word order serves as the sole indicator of the grammatical category.

5. Discussion

The quote from Thompson (1978) presented at the beginning of this paper poses two questions: what grammatical properties can and cannot be signalled by the order of predicates and their arguments, and why are certain properties signalled in this way? The answer to the first question can be found in Hopper & Thompson's (1980) Transitivity scale, which lists ten components (or parameters) that allow clauses to be characterized as more or less transitive: number of participants, kinesis, aspect, punctuality, volitionality, affirmation, mode, agency, affectedness of the object, and individuation of the object. Actions that are highly effective and/or intense are considered to be more transitive than actions that are not effective and/or low in intensity. Each parameter on the scale has a more transitive (high) and a less transitive (low) value.

Each of the grammatical categories expressed by word order alternations can be placed on this Transitivity scale. The reality status alternation that we see in Iquito and Sasak falls under the mode parameter: this parameter refers to the distinction between realis and irrealis. The irrealis value is considered to be the less transitive one: 'actions which did not occur or only hypothetically occurred are less effective than ones corresponding directly with a real event' (Hopper & Thompson 1980: 252). The negation alternation found in West African languages falls under the affirmation parameter: affirmative sentences are more transitive than negative ones. The aspect alternations found in Tikar and Kokama-Kokamilla correspond to the aspect parameter. The values for this parameter are telic and atelic. A telic action, or an action that is viewed from its endpoint or completed, is considered more transitive than an atelic one (an action that is in progress, not completed).[6] Finally, the definiteness alternation seen in Puare and K'iche' corresponds to the individuation of the object parameter. Definite nouns are more highly individuated, and thus fall under the more transitive value than indefinite nouns.

The Transitivity scale parameters proposed by Hopper & Thompson (1980) cover a wide range of linguistic characteristics. Yet there are some properties of language that we would predict to be independent of transitivity

[6] The alternation in Tikar between the progressive and the habitual (both of which are considered to be atelic aspects) falls under this parameter only if we treat the values on the scale as gradient, rather than absolute. Habitual aspect can be considered to be more transitive than progressive aspect: although a habitual action does not have a fixed end point, it does imply that the action has been carried out to its completion at least once, something that cannot be presumed for progressive sentences. For example, in the habitual sentence *John rides motorcycles*, it is presupposed that John has ridden a motorcycle before. In the progressive sentence *John is riding a motorcycle*, no such presupposition can be made.

and therefore would not correlate with a word order alternation, such as the nominal properties of number and gender (neither of which play a role in the effectiveness or intensity of an action) and tense distinctions such as the remote and the recent past (both of which are arguably comparable in terms of effectiveness and intensity). To date, no such alternations have been described in the typological literature. In turn, there are linguistic properties that are not included in Hopper & Thompson's (1980) Transitivity scale but that we would predict to be expressed by a word order alternation, namely the distinction between interrogative and declarative sentences. Interrogatives are arguably less transitive than their declarative counterparts, especially polar interrogatives; an interrogated action is presumably less effective and intense than a declarative one.[7] Such an alternation is attested for yes-no questions in the Germanic languages via subject-auxiliary inversion, where S Aux V order is used with declaratives and Aux S V is used with interrogatives.

As for the question of why these properties are signalled in this way, Hopper & Thompson (1980: 277) argue that 'the O[bject] of a clause which is imperfective, negated, inactive, or irrealis is somehow less of an O than in the perfective, affirmative (etc.) clause; and it is marked as such in the morphosyntax'. In other words, objects are affected by the transitivity of the clause, and objects of less transitive clauses will be more marked than objects of more transitive clauses. While the authors are referring specifically to overt marking on the object, this statement can be expanded to encompass what we see with word order alternations. Instead of a change in morphological marking, objects in word order alternations are differentiated by a change in position, but the purpose remains the same and that is to indicate that the object is somehow less affected by the clause.

Furthermore, the Transitivity scale can also be used to determine which order will occur with each value. Since it is expected that objects of less transitive clauses will be more marked than objects of more transitive clauses, I hypothesize that in languages that exhibit a word order alternation, the more transitive value will align with the language's more frequent, default, or basic word order, and the less transitive parameter will correlate with the word order that is considered to be more marked in the language. This hypothesis bears out for Iquito: the basic word order is SVO, and this order aligns with the realis (the more transitive value of the mode parameter). SXV is an alternative, more marked order and aligns with the expression of the irrealis, the less transitive value of the realis/irrealis parameter. The hypothesis also

[7] An interrogative parameter would exhibit some overlap with the affirmation parameter and the mode parameter of Hopper & Thompson's scale, but neither of these parameters fully capture polar interrogatives.

holds for the expression of negation in the West African languages: the basic word order for these languages is considered to be VO (Güldemann 2007), and thus the more transitive value (affirmative) aligns with the basic word order (SVO) and the less transitive value (negative) aligns with an alternative order (SOV).[8] However, this hypothesis does not explain the alternations we see in Sasak or in K'iche', where the subject alternates with the verb and the position of the object does not change. This is an area that merits further investigation.

6. Conclusion

This paper presented several grammatical categories that are conveyed via word order alternation: reality status in Iquito and Sasak, negation in several West African languages, aspect in Tikar and Kokama-Kokamilla, and definiteness in Puare and K'iche'. The majority of the alternations involved reordering the verb and its object, but the Sasak alternation reordered a subject clitic with respect to the verb, and in K'iche' the alternation occurred between the subject and the object. Each of these alternations were compared to the Iquito case, which was considered to be an example of an 'ideal' alternation because word order was the sole indicator of the grammatical category.

I also argued that the grammatical categories expressed by word order alternations correspond to the parameters on Hopper & Thompson's (1980) Transitivity scale and that the alternation is a means of marking the degree in which the object is affected by the clause. Objects of less transitive clauses are less affected by the clause, and objects of more transitive clauses are more affected by the clause. It is predicted that the more transitive value for each parameter will align with the language's basic word order, and the less transitive parameter will correlate with a non-canonical word order. This prediction plays out in the languages for which there is sufficient data, but further research is necessary.

This work may provide insight into languages that have been previously labelled as having free word order. The data from Kokama-Kokamilla, in particular, suggests that languages with variable word order might in fact be subject to constraints, and that these constraints may align with one of the parameters on the Transitivity scale.

Both Thompson (1978: 23) and Payne (1993: 281) underscore that the exploitation of word order to convey a grammatical property is rare cross-

[8] There is very little data available regarding the basic word order of the other languages; see Hansen (2011) for a discussion of the possibilities and predictions.

linguistically. I predict that other examples of word order alternations will be found as we continue to collect and analyze data from the world's endangered languages and that the parameters of the Transitivity scale can be used as a starting point for where to look.

References

Austin, Peter. 1996. *Clitic pronouns and ergativity in Bahasa Sasak*. Unpublished manuscript.

Beier, Christine, Cynthia Hansen, I-wen Lai & Lev Michael. 2011. Exploiting word order to express an inflectional category: reality status in Iquito. *Linguistic Typology* 15(1), 65–100.

Chumbow, Beban & Pius N. Tamanji. 1994. Bafut. In Peter Kahrel & René van den Berg (eds.), *Typological studies in negation* (*Typological studies* 29), 211–236. Amsterdam: John Benjamins.

Donohue, Mark. 2008. Semantic alignment systems: what's what, and what's not. In Mark Donohue & Søren Wichmann (eds.), *The typology of semantic alignment*, 24–75. New York: Oxford University Press.

Elliott, Jennifer. 2000. Realis and irrealis: forms and concepts of the grammaticalisation of reality. *Linguistic Typology* 4, 55–90.

England, Nora C. 1991. Changes in basic word order in Mayan languages. *International Journal of American Linguistics* 57(4), 446–486.

Good, Jeff. 2003. When arguments become adjuncts: split configurationality in Leggbo. *Proceedings from the Annual Meeting of the Chicago Linguistic Society* 39, 110–29.

Güldemann, Tom. 2007. Preverbal objects and information structure in Benue-Congo. In Enoch O. Aboh, Katharina Hartmann & Malte Zimmermann (eds.), *Focus strategies in African languages: the interaction of focus and grammar in Niger-Congo and Afro-Asiatic*, 83–111. New York: Mouton de Gruyter.

Hansen, Cynthia I. A. 2011. *Expressing reality status through word order: Iquito irrealis constructions in typological perspective.* Doctoral dissertation, University of Texas at Austin.

Hopper, Paul J. & Sandra A. Thompson. 1980. Transitivity in grammar and discourse. *Language* 56(2), 251–299.

Lai, I-Wen. 2009. *Time in the Iquito language*. Doctoral dissertation, University of Texas at Austin.

Mithun, Marianne. 1995. On the relativity of irreality. In Joan L. Bybee & Suzanne Fleischman (eds.), *Modality in grammar and discourse*, 367–388. Amsterdam: John Benjamins.

Mithun, Marianne. 1999. *The languages of Native North America.* Cambridge: Cambridge University Press.

Ndimele, Ozo-mekuri. 2009. Negation marking in Igbo. In Norbert Cyffer, Erwin Ebermann & Georg Ziegelmeyer (eds.), *Negation patterns in West African languages and beyond* (*Typological studies in language* 87), 121–137. Philadelphia: John Benjamins.

Payne, Doris L. 1993. Meaning and pragmatics of order in selected South American Indian languages. In William A. Foley (ed.), *The role of theory in language description*, 281–314. New York: Mouton de Gruyter.

Stanley, Carol. 1986. *Description morpho-syntaxique de la langue tikar* (*parlée au Cameroun)*. Paris: Société Internationale de Linguistique.

Thompson, Sandra A. 1978. Modern English from a typological point of view: some implications of the function of word order. *Linguistische Berichte* 54, 19–35.

Vallejos Yopán, Rosa. 2004. *Basic clauses in Kokama-Kokamilla*. Master's thesis, University of Oregon.

Vallejos Yopán, Rosa. 2010. *A grammar of Kokama-Kokamilla*. Doctoral dissertation, University of Oregon.

Vydrine, Valentin. 2009. Negation in Southern Mande. In Norbert Cyffer, Erwin Ebermann & Georg Ziegelmeyer (eds.), *Negation patterns in West African languages and beyond* (*Typological studies in language* 87), 223–260. Philadelphia: John Benjamins.

Welmers, William Everett. 1973. *African language structures*. Berkeley: University of California Press.