

On the perfect tense-aspect in K'ichee'an Mayan: An LFG approach

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Abstract

Previous accounts of the perfect tense-aspect in the K'ichee'an languages have concluded that the category or part-of-speech of the perfect is a verb, or less often, a participle. We believe otherwise. Empirical support is presented for the hypothesis that the perfect is expressed using either a deverbal participial adjective or a deverbal possessed nominal in the form of a detransitivized non-verbal predicate. Although the perfect is always expressed as a one-place intransitive, the perfect retains the capacity to express two argument roles. We argue that the perfect is, in fact, a perfect. We present the various semantic types of perfect, including the perfect of result and the experiential perfect, and also show temporal restrictions that constrain the perfect. The analyses are implemented using the syntactic architecture of LFG.

1 Introduction

The perfect 'tense-aspect' of the K'ichee'an languages has attracted only the most cursory attention in the descriptivist Mayan literature (Dayley 1985, Larsen 1988, Mondloch 1978).^{1,2} The situation improves with Classic Mayan in epigraphy and historical linguistics (MacLeod 2004, Wald 2007), yet the only theoretical analysis of the perfect is Bohnemeyer's (2002, *inter alia*) semantics research on Yukatek Mayan. We attempt to contribute to this research by reporting on the perfect tense-aspect of K'ichee' Mayan using the formal apparatus of LFG. This remains a preliminary step only because a more thorough knowledge of the perfect can only be gained through an understanding of its semantic and pragmatic components.

The perfect is referred to here as a tense-aspect because of the difficulty in determining its formal status: tense, aspect, or hybrid (Comrie 1976, Hornstein 1990, Kibort 2009, Klein 1994, Ritz 2012)? A further complication is that the Mayan languages with few exceptions are acknowledged to be grammatically tenseless (Bohnemeyer 2002 for Yukatek, *inter alia*). Aspect/mood has been grammaticalized

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2. $x = [-\text{voi}]$ alveopalatal fricative, $j = [-\text{voi}]$ velar fricative, $[x''] =$ glottalized occlusive / glottal stop; $(*x) / *(x) / [x] = x$ is ungrammatical / obligatory / reconstructed; $- / \langle \text{space} \rangle =$ morpheme / word boundary. ABBREVIATIONS: first/second/third person = 1/2/3, absolutive/ergative = ABS/ERG, adjective = A, adjunct = ADJ, actor focus = AF, adverb = ADV, agreement marker = AM, antipassive = AP, causative = CAUS, completive/incompletive aspect = COM/INC, definite = DEF, determiner = DET/D, discourse function = DF, directional = DIR, distributive = DISTR, derived transitive verb in $-j'$ = DTJ/DT', finite = FIN, grammatical function = GF, inchoative = INCH, interrogative = INT, intensifier = INTS, irrealis = IRR, negative = NEG, non-verbal predicate negative = NVP.NEG, nominalizer = NOML, numeral = NUM, participle = PART, passive/completive passive/stative passive = PASS/COM.PASS/STAT.PASS, perfect = PERF, present perfect = PP, plural = PL, genitive possessor = POSS, positional = POSL, possession = Poss, preposition = PREP/P, independent pronoun = PRO, sentence = S, stem-forming vowel = SFV, singular = SG/S, tense = TNS, transitive/intransitive/dependent phrase final marker = TPF/IPF/DPF, (in)transitive verb = IV/TV.

on finite verbs, but not tense. The consensus in the Mayanist literature is that the perfect tense-aspect is a verb (5), or less often, a participle (9). We reject these proposals and suggest alternate accounts. We contend that K'ichee' perfects are not finite verbs, an argument based partly on the absence of prefixed aspect morphology, which, we suggest, represents the crucial diagnostic of the verb category.³ And because K'ichee' perfects are non-periphrastic, they cannot be finite verbs due to the absence of auxiliaries. We show that what is often claimed to be a perfect is a perfect. We propose that the K'ichee' and Tz'utujiil perfects are statives, and deploy exclusively as non-verbal predicates. We show that K'ichee' and Tz'utujiil perfects are expressed with two distinct parts-of-speech: a participle-like deverbal adjective and a deverbal possessed nominal. The adjective functions as an attributive while both adjective and nominal function as predicates. Our analysis resolves multiple inconsistencies that exist with previous approaches and predicts several outcomes. Most notably, that the predicative perfect is grammaticalized as an intransitive, irrespective of the transitivity of the root or stem from which it was derived.

The paper is organized along the following lines. Section 2 reviews the literature on the perfect for K'ichee' and Tz'utujiil. Section 3 examines the grammatical constructions used with the perfect, outlines the basic semantic types available to the perfect, and provides a discussion on the perfect. Section 4 develops an account of the perfect using the architecture of LFG. Section 5 concludes the paper.

2 Background

2.1 Introduction In the K'ichee'aan languages in general, the verb category is composed of a single agglutinating constituent.^{4,5} More specifically, verbs are morphologically marked with prefixed aspect and mood markers and with suffixed mood markers, when required, but not tense markers. Verbs host person and number marking absolutive (ABS) and ergative (ERG) agreement markers (AM):

- | | | | | | |
|-----|-----------------------------|----|-----|---------------------|----|
| (1) | x-ee-w-il-o | TV | (2) | x-ix-b'iin-ik | IV |
| | COM-3PLABS-1SERG-see-TPF | | | COM-2PLABS-walk-IPF | |
| | ‘I saw them (Duncan 2013).’ | | | ‘You all walked.’ | |

Non-verbal predicates (NVP) are zero-copular (Duncan 2013): a NV possessed nominal predicate in (3), and a NV adjectival predicate in (4):

3. One exception in K'ichee is the morphologically unmarked imperative. Evidence exists that this diagnostic consistently holds across the Mayan language family. Marginal variation occurs in Itzaj (Hofling 2001), while in Tzeltal (Shklovsky 2005) prefixed/pre-predicate aspect morphology with non-standard tense-like behaviour co-occurs with the perfect.

4. Kichee' data in Introduction of Background section 2.1.

5. This excludes the non-bound periphrastic continuous aspect constituent (*ka)tajin*.

Table 1 ERG, POSS, ABS AMs and PRO in K'ichee'

	<i>ergative</i>		<i>possessive</i>		<i>absolute</i>		<i>pronoun</i>	
	<i>sg</i>	<i>pl</i>	<i>sg</i>	<i>pl</i>	<i>sg</i>	<i>pl</i>	<i>sg</i>	<i>pl</i>
1.	in/w	qa/q	nu/w	qa/q	in	uj/oj	in	oj
2.	aa/aw	ii/iw	aa/aw	ii/iw	at/aa	ix	at	ix
3.	u(u)/r	ki/k	u(u)/r	ki/k	∅	ee	are'	a'are'

- (3) (aree) ∅ aw-achi'l (4) sib'alaj ee jeb'al
 3S_{PRO} 3S_{ABS} 2S_{POSS}-friend very.much 3PL_{ABS} pretty
 '(S/he) [is] your friend.' 'They are very pretty.'

The ergative (set A), absolute (set B), and possessive AMs and independent pronouns of K'ichee' are shown in Table 1.

2.2 Tz'utujil Tz'utujil's perfect "indicates an activity that was completed in the past but that has some relevance to the present."⁶ The finite verb paradigm falls into two mutually exclusive divisions: the nonperfect and the perfect. The nonperfect verb (1)–(2) must begin with a tense, aspect, and/or mode prefix, and may require a suffix that is dependent on the verb class. The perfect verb never uses TAM prefixes but requires a suffix that changes according to verb class: *-naq* for intransitive verbs (5), and *-(o)on / -(u)un / -(a)an* for transitive verbs (7).

Some perfect intransitive verbs (5) also function as adjectives (6), with a meaning of having acquired the state indicated by the intransitive verb:

- (5) ee war-naq (6) ee war-naq
 3PL_{ABS} sleep.IV-PERF 3PL_{ABS} sleep.ADJECTIVE-PERF
 'They have slept (Dayley 1985:77).' 'They are asleep (Dayley 1985:77).'
- (7) in ki-kuuna-an
 1S_{ABS} 3PL_{ERG}-cure.DTJ-PERF
 'They have cured me (Dayley 1985:76).'

The perfect stems of transitives may also be considered as past passive participial adjectives ("adjectival passives"). In these cases they have passive meanings and inflect only for patients, using the absolute AMs (9). Compare the derived transitive verb (DT') in (8) to the passivized predicate adjective (A) in (9):⁷

6. Dayley (1985:74–79, 213–5, 343–4, 352–4) for Tz'utujil section 2.2.
 7. (9) can also be translated as 'You have all been loved' (see Dayley 1985:343).

- (8) ix q-ajo'-oon (9) ix ajo'-oon
 2PLABS 1PLERG-love.DT'-PERF 2PLABS love.ADJECTIVE-PERF
 'We have loved you all (D 1985:78).' 'You are all loved (Dayley 1985:79).'

Past passive participial adjectives, which are stative predicates, differ from verbal passives: the former emphasize the state that results from the transitive activity (10):

- (10) ja ti nuu-chaaq' chaj-il jaay
 DET little 1SPOSS-little.brother guarder.of.NOML house
 ya'-oon kan (r-mal nuu-tee')
 put-PERF staying 3SPOSS-by 1SPOSS-mother
 'My little brother has been made house watcher (by my mother) (D 1985:344).'

Agent focus perfect participles are adjectives derived from transitive verbs (11). The agent is highlighted by being put in focus before the adjective. While the sentence is semantically transitive the agent focus adjective is a stative predicate:

- (11) n-mama' ee tzuq-uyun ja meeb'a'-ii'
 1SERG-grandfather 3PLABS feed.ADJECTIVE-PERF DET orphan-PL
 'My grandfather is the one who has fed the orphans (Dayley 1985:353).'

2.3 K'ichee' The intransitive suffix *-inaq* derives perfect participles ("deverbal adjectives") from intransitive verbs that function as "special" NVPs.⁸ When predicative, they can be translated as verbs in the perfect aspect (14a). With patient-like subjects (12), they can be considered stative NVPs (Larsen 1988:186, 193):

- (12) e' kam-inaq (13) ø peet-inaq
 3PLABS die-PERF 3SABS come-PERF
 'They have died, they are dead.' 'S/he is coming.'

The transitive perfect suffixes *-oom/-uum/-m* derive perfect passive participles from transitive verb roots, and are used as noun modifiers (16) and adjectival predicates (9). Indicating the perfect in a transitive clause, perfect passive participles represent their objects as absolutive AMs and their subjects as ergative AMs (14a).

However Larsen conjectures that the perfect's prefixed AMs might instead represent possessive pronouns, because the first person singular AM *-nu* represents the possessive AM, not the ergative AM *-in* (14b) (see Table 1). In the end, Larsen remains ambivalent, and seems to settle for the transitive participle approach (14a):

8. Larsen (1988:185–8, 207–8 fn. 15, 230, 234–8, 281 fn. 7) for K'ichee' in section 2.3.

- (14) at nu-ch'ay-oom
 2SABS 1SERG/1SPOSS-hit-PERF
 (a) 'I have hit you (Larsen 1988:236).' nu- is 1SERG
 (b) 'You are my one-who-has-been-hit (Larsen 1988:238).' nu- is 1SPOSS

Perfect participles can also be used attributively, both intransitive (15) and transitive (16), and nominally (17):

- (15) jun kam-inaq tz'i'
 one die-PERF dog
 'a dead dog (Larsen 1988:187)'
- (16) tzak-om saqmo'l
 cook-PERF egg
 'boiled egg (Larsen 1988:235)'
- (17) nu-mok-oom (18) in b'iin-inaq
 1SPOSS-ask.services.of-PERF 1SABS walk-PERF
 'my servant (Larsen 1988:236)' 'I (will) have/had walked (L 1988:185).'

Because participle-based NVPs are not marked with aspect markers or tense, they can be interpreted, depending on context, as present, past, or future perfect (18).

2.4 Nahualá K'ichee' The data in (19) demonstrate Mondloch's (1978:127) treatment of K'ichee's perfect as a verb.⁹ Mondloch's interpretation is based on the word order of SVO: *lee nujii'* as the subject, *r-uk'a'm* as the ergative-marked perfect verb, and *lee chiim* as the object:¹⁰

- (19) lee nu-jii'_{subj} r-uk'a'-m_{verb} lee chiim_{obj}
 DET my-son.in.law 3SERG-carry-PERF DET bag
 areetaq x-oopan chuwa w-o'ch
 when COM-arrive at my-house
 'My son-in-law was carrying the bag when he arrived at my house.'

In addition to the 'present,' the perfect aspect also occurs in the 'past' and 'future' (18). When the accompanying clause uses the completive aspect, the pluperfect aspect is used to translate the perfect. When the accompanying clause includes an incompletive aspect, the perfect is translated as the future perfect aspect.

2.5 Perfects in non-K'ichee'an Mayan In epigraphic studies, Wald (2007) investigates the Classic Mayan perfect, analogizing it to Tzeltal and Tzotzil Mayan perfects. He builds on MacLeod's (2004) insight that perfect morphology is represented in the Classic Mayan glyphs. MacLeod (2004:292) suggests that Classic Mayan perfects, used in the form of derived transitive verbs with the suffix *-VVj < **-V-ej, originated as perfect participles. The perfect suffix is cognate with suffixes

9. Mondloch (1978:127, 130, 134; 1981:85, 89–90, inter alia) for Nahuala K'ichee' in section 2.4.

10. Mondloch uses the present continuous when glossing the K'ichee' perfect (19).

on gerunds and inflected perfect verbs in Tzeltalan and Tojolobal. Wald argues that all so-called perfect forms are verbs, but are not ‘actional’ perfects. Rather he claims that they are ‘statal’ perfects, or resultatives. Wald (2007:316-9) acknowledges little agreement with Kaufman (1971, 1972), who indicates that Tzeltal and Tzotzil Mayan perfects include a transitive verb in **-ej/-oj*, a perfect active participle in **-em*, and a perfect passive participle in **-b’il* (**-ab*’ passive (Kaufman 1989)).

In Zinacantán Tzotzil, verbs in the indicative mood inflect for prefixed aspect markers except for the perfect aspect, which uses suffixes: intransitive stems use *-em* (20), transitive stems use *-oj* (21), and passive verbs use *-bil* (22).¹¹ Transitives mark subjects with prefixed ergatives (set A), while the perfect aspect and NVPs require the suffixed absolutes (set B): (Aissen 1987:43–4, 66)

- | | | |
|-----------------|-----------------------|----------------------|
| (20) tal-em-on | (21) av-il- <i>oj</i> | (22) pech-bil-on |
| come-PERF-1SABS | 2SERG-see-PERF | bind-PASS.PERF-1SABS |
| ‘I have come.’ | ‘You have seen it.’ | ‘I have been bound.’ |

The 3rd person pluralizer *-ik* in (23) agrees with the inanimate nominal *ak’u’ik* but only because the clause is a NVP – plural agreement with inanimates is not permitted with verbs. Aissen therefore claims, at least, that intransitive perfects are NVPs. Aissen surmises further that “[t]here is some evidence that perfects are not verbs, but A’s, for they suffix *-uk/-ik-* under negation” (24).¹² All three perfects when negated suffix the NVP negative marker *-uk/ik*: (Aissen 1987:53, 59)

- | | | |
|------------------------------|-------------------|----------------------------|
| (23) jat-em- ik | a-k’u’- ik | (24) mu k-il- <i>oj-uk</i> |
| torn-PERF-3PL | 2SERG-shirt-2PL | NEG 3SERG-see-PERF-NVP.NEG |
| ‘Your (PL) shirts are torn.’ | | ‘I did not see it.’ |

According to Vinogradov (2014:42), Tzotzil finite verbs must be aspectually marked for completive or incompletive. Thus the perfect and posterior aspects, which are not permitted to use prefixed aspect morphology, are non-finite participles.

In Petalcingo Tzeltal, there is an agent-oriented transitive perfect verb in *-oj/-ej* (25), (26), a patient-oriented transitive perfect deverbal in *-bil* (27), and an intransitive perfect verb in *-em/-en* (28) (Shklovsky 2005:48–9, 58–61). The *-oj/-ej* perfect requires the ergative, but the *-bil* perfect does not permit it. The *-bil* and *-em* perfects can also be used attributively, but not the *-oj/-ej* perfect:¹³

- | | |
|-----------------------------|-----------------------------|
| (25) s-mil- <i>oj-∅</i> | (26) x-jel- <i>oj-∅</i> |
| 3SERG-kill-PERF-3SABS | INC.3SERG-change-PERF-3SABS |
| ‘He has killed him/her/it.’ | ‘He will have changed it.’ |

11. Aissen (1987:5, 13, 41–3, 59 fn 1/fn 7, 66, 96–7, 117–8).

12. The ‘A’ class includes all stems that can predicate, but that are not nouns or verbs. A’s cannot inflect for aspect, nor can they combine with genitives. We assume A’s mainly consist of adjectives.

13. Shklovsky (2005:59, 59, 60, 61) for (25), (26), (27), and (28). Note (26): *xjeloj* < *x-s-jel-oj*.

- (27) te mut mil-bil ta ts'i' (28) yahl-em te alal-e
 DET chicken kill-PERF PREP dog fall-PERF DET child-CL
 'The chicken was killed by the dog.' 'The child has fallen.'

Tzotzil exhibits 'unmarked aspect': zero marking aspects depending on the verb's transitivity. Intransitives mark the incomplete with *x-*, while transitives mark the complete with *laj*. Therefore (25) represents a complete intransitive perfect, while (26) is an incomplete intransitive perfect.¹⁴

In Chol Mayan, stative predicates are not permitted to use aspect morphology, unlike eventive predicates which require an initial aspectual marker (Coon 2010:29, 38, 204–5). The suffix *-em*, used on intransitive roots/derived intransitive stems, forms stative predicates (29). *-em* can also be used on passives derived from transitive roots (30), and on positional roots: (Coon 2010:204, 205)

- (29) jul-em-ety-ix (30) mejk'-em-oñ
 arrive.here-PERF-2SABS-already hug.PASS-PERF-1SABS
 'You arrived here already.' 'I've been hugged.'

In Itzaj Mayan, transitive perfect verbs (*-maj*) (31) do not permit aspectual prefixes (Hofling 2000:50, 55, 165–72, 368–71, 369 fn. 6). Perfect participles (*-maja'an*) (32) are formed from transitive stems, but have both active and passive meanings:¹⁵

- (31) uy-il-maj-ech (32) b'o'ol-maj-a'an (Hofl 2000:170)
 3SERG-see-PERF-2SABS pay-PERF-PART
 'She has seen you (Hofling 2000:50).' 'has been a payer, has been paid'

The Mayan languages discussed here, except possibly Petalcingo Tzeltal, do not permit prefixed / pre-predicate aspect marking on perfects. Another issue is evident in Chol, where the *-em* perfect suffix marks both transitive and intransitive perfects. Crucially transitive stems are morphologically marked as passive and detransitivized. This correlates to the K'ichee'an where the transitive root/derived transitive stem is detransitivized as a *-Vm* perfect—but without overt passive morphology. Although Aissen is inconsistent about the perfect's category, she claims, correctly we argue, that Tzotzil perfects are likely not verbs but NVPs. This adds crucial support to the hypothesis presented in this paper. In light of the various Mayan data discussed here, we believe that strong correlations are evident with the K'ichee'an data in this paper, allowing for language-specific lexical and morphological variation.

14. If this is correct, then, why are the two argument intransitive perfects in (25) and (26) glossed as two place transitives? Because Shklovsky provides no substantive account for this puzzle, we assume that the *-oj/-ej* perfect is an intransitive, as originally marked, and a possessed nominal predicate.

Therefore we gloss (25) as, 'S/he/it is his one-who-has-been-killed.'
 15. We gloss (31) as the NVP, 'You are her one-who-has-been-seen.'

2.6 Perfects and resultatives in non-Mayan languages It is not difficult to show that K’ichee’ perfects are indeed perfects, and further, are not verbs. Whether K’ichee’ perfects include resultative properties is less clear, although our data suggest otherwise. Yet judging by examples (6), (9), and (12), it appears that the descriptivists implicitly accept that perfects and resultatives share properties.

Regarding resultatives and statives, the former are defined as “those verb forms that express a state implying a previous event” (Nedjalkov & Jaxontov 1988:5–6), while statives “may denote natural, primary states which do not result from any previous event.” Notwithstanding Wald’s conclusions, Nedjalkov & Jaxontov (1988:7) themselves admit that “it is not always easy to distinguish between statives and resultatives.” Therefore they amend their definition of resultatives to include a narrow use (resultative) and a broad use (resultative + derived stative).

Furthermore, “[s]ince [resultatives and statives] are very close to each other, in languages that possess both categories they are often interchangeable” (Nedjalkov 2001:928). For example, Ancient Greek’s active perfect is considered to be a stative by one author and a resultative by yet another. There are Russian dialects that have resultative converbs that are in the process of acquiring perfect features, like non-terminative verbs (‘to know, to walk’) (Nedjalkov 2001:936–7). Lithuanian has perfects with properties of resultatives: the perfect (33) can be used as the resultative (34) simply by including an adverb of duration — here, *jau metai*:¹⁶

- | | | | | | |
|------|-------------------------|------|------|-----------------------------------|-----|
| (33) | <i>Jis [yra] mir-ės</i> | PERF | (34) | <i>Jis [yra] mir-ės jau metai</i> | RES |
| | ‘He has died.’ | | | ‘He is dead already for a year.’ | |

And recall that, unlike the resultative, the perfect:

can be derived from any verb, either transitive, or intransitive, either terminative or durative, including those verbs that denote situations which do not change the state of any participant (e.g., verbs meaning ‘to work’, ‘to sing’, ‘to laugh’, etc.) (Nedjalkov & Jaxontov 1988:15)

Typological and detailed studies of European languages demonstrate just how unstable the present perfect, in particular, is, how the perfect can shapeshift along a gradient of ‘perfect-ness’—result to simple past—and how language-specific that variability can be. This is a natural by product of the volatile diachrony of the periphrastic perfect, in the European languages at least, from statives to resultatives to perfects of result to indefinite past perfects to preterites and the simple past (see Bybee et al.:1994). Comrie (1976:53, 61) advises caution in adopting ‘perfect’ designations because in languages like Latin, in some Romance languages (French, Italian, Romanian) “the so-called Perfect covers both perfect and non-perfect meaning” and “[g]iven that the perfect partakes of both present and past, it is possible for languages to differ over just how present or past their perfect forms are.”

Languages vary in their restrictions on the possible meaning types of perfect. A Brazilian Portuguese dialect greatly restricts meanings of the present perfect

16. Lithuanian data from Nedjalkov (2001 citing E. Geniušienė p. c.)

(PP) (Kibort 2009 citing Laca, Cabredo-Hofherr, & Carvalho 2007). The universal meaning of the PP is allowed. But the experiential, resultative, and recent anteriority meanings and adverbs *ja* ‘already’ and *ainda não* ‘still not’ are not permitted.

Languages also vary to the extent perfects and simple past tenses share properties. Dutch allows property sharing, which is transparent in the analysis of the ‘aspectual’ and ‘past time’ PPs and the latter’s close semantic relationship with the simple past (Van Eynde 2000:231–49).¹⁷ The aspectual PP allows combinations of durational and temporal adverbs, while the past time PP allows only past and durational temporal adverbs. The past time PP is more similar semantically to the simple past than to the aspectual perfect, with the English equivalent of the past time PP translated as the simple past. Yet the Dutch past time PP and the simple past are not identical. The former has a semelfactive interpretation, whereas the latter an habitual interpretation (Van Eynde p. c.).

3 Grammar and meaning of the K’ichee’ perfect

3.1 Grammatical forms The perfect is very productive in K’ichee’an, being used with an array of grammatical constructions. They include the following intransitive and transitive roots and stems: completive passives/mediopassives (*-taj*), antipassives (*-n*), causatives (*-isa*), positionals (*-l*) (see (44)), reflexives (reflexive pronoun), pseudo noun-incorporated (NP), actor focus (*-Vw/-n*), directionals (*ee-*).

The verb stem (35) is composed of a verb root and the detransitivizing completive passive suffix (*-taj*). The verb stem in (36) consists of a nominal root, a stem-forming vowel, and the detransitivizing antipassive suffix (*-n*):

- | | | | | | |
|------|---------------------------------------|-----------|------|-------------------|------------------|
| (35) | b’an-taj-inaq | lee ja | (36) | at | kun-a-n-naq |
| | make-COM.PASS-PERF | DET house | | 2SABS | cure-SFV-AP-PERF |
| | ‘The house has gotten done/finished.’ | | | ‘You have cured.’ | |

With the transitive verb in (37), the reflexive pronoun *-iib’* shows subject agreement. However the reflexive pronoun in (38) shows agreement with the perfect’s possessor, not the grammatical subject; the perfect’s subject is the null set (\emptyset):¹⁸

- | | | | |
|------|---------------------------------|------------------------|--------------------------|
| (37) | ka- ki -chaj-i-j | k-iib’ | |
| | INC-3PLERG-guard-SFV-DTJ | 3PLPOSS-self:REFL | |
| | ‘They take care of themselves.’ | | |
| (38) | laa \emptyset | ki-tij-(o)-om | k-iib’/*r-iib’? |
| | INT 3SABS | 3PLPOSS-teach-SFV-PERF | 3PLPOSS-self/3SPOSS-self |
| | ‘Have they taught themselves?’ | | |

17. The past time perfect is *not* a pluperfect.

18. (38) ‘Is it their ones-who-have-been-taught [by] themselves?’

The verb stem in (39) consists of multiple derivational morphemes. The *-ir* suffix derives the inchoative intransitive verb *b'aqir* from the adjective *b'aq*, while the *-(i)sa* suffix derives the transitive causative stem *b'aqirsa* from the inchoative:

- (39) ee b'aq-ir-sa-an ja ch'uu' (r-umaal ja q'iiq')
- 3PLABS thin-INCH-CAUS-PERF DET fish 3SERG-by DET wind
- 'The fish have been made thin (by the wind) (Dayley 1985:344).'

The verb stem in (40) is a transitive root in a pseudo noun-incorporating construction. The bare nominal *k'ax* is the subject of the perfect possessed nominal NVP:¹⁹

- (40) le kaqulja' sib'alaj u-b'an-om (*k'i) k'ax
- DET storm very.much 3SPOSS-make-PERF many bad
- 'The storm has done a lot of damage.'

The verb stem in (41) consists of a transitive root and the detransitivizing actor focus suffix (*-Vw/-n*). The grammatical subject, which must also be the agent or experiencer, must immediately precede the absolutive AM (ABS). It is curious that the actor focus perfect, which requires root transitives or derived transitive stems, uses the *-inaq* perfect suffix, not the anticipated *-Vm* perfect suffix. The verb root in (42) is *war* 'sleep' with the directional prefix *ee* 'go' (Dayley 1985:98):

- (41) aree in il-ow-inaq in (42) in ee-war-naq TZ'UTUJIL
- 3SPRO 1SABS see-AF-PERF 1SPRO 1SABS go-sleep-PERF
- 'S/he (is the one who) has seen me.' 'I have gone and slept (1985:98).'

3.2 Semantic types of the perfect The various types of perfects available in the K'ichee'an languages are outlined here. They include the perfect of result, the experiential perfect, and the perfect of the extended now (XN)/universal perfect.

A perfect of result is shown in (43). Comrie (1976:56) claims that in a result perfect "a present state is referred to as being the result of some past situation":

- (43) ee b'ee-naq lee ixoq-iib' chi pa Nawala
- 3PLABS go-PERF DET woman-PL already PRED N.
- 'The women have already gone to Nahualá.'

Experiential, or indefinite past, perfects with atelic predicates are shown in (44)–(45). They indicate that "a given situation has held at least once during some time in the past leading up to the present" (Comrie 1976:58):²⁰

19. 'It is the storm's thing-that-has-been-done-bad'/'It is the storm's badness-that-has-been-done.'

20. 'Great Grandfather Maximon (Tied-Up One) is my one-who-has-been-seen in Santiago Atitlán.'

- (44) ee k'oo-l-inaq Tzolola
 3PLABS exist-POSL-PERF Tz.
 'They have been to Sololá.'
- (45) w-il-om Rii Laj Mam Maximon pa Santiago Atitlán
 1SERG-see-PERF DET INTS grandfather M. PREP S.
 'I have seen Great Grandfather Maximon in Santiago Atitlán.'

The universal perfect, or the extended now perfect (XN), which requires an atelic predicate, is shown in (46)–(47). The universal perfect describes “a situation that started in the past but continues (persists) into the present” (Comrie 1976:60):^{21, 22}

- (46) pa taq lajuj haab' ee k'oo-l-inaq pa Santa Cruz
 PREP DISTR ten year 3PLABS exist-POSL-PERF PREP S.
 'They have lived in Santa Cruz for ten years.'
- (47) y k'oo jun laj u-baaq r-uk'a'-m b'iik
 and exist NUM small 3SPOSS-bone 3SPOSS-receive-PERF DIR
 'And he had a small bone he was carrying along (Mondloch 1978:194).'

3.3 Perfects? We demonstrate here the temporal constraints on the K'ichee' an perfect, and that it is, in fact, a perfect, not a resultative. Temporal adverb phrases, like *ojeer* 'before' (48) and *myeer* 'earlier' (49), can be used with the perfect.²³

- (48) **ojeer** k'oo-l-inaq pa wee k'oo-l-ib'al
 before:ADV be-POSL-PERF PREP DET be-POSL-LOC
 'He has been at this place before.'
- (49) la **myeer** at ul-inaq
 INT earlier 2SABS arrive-PERF
 'Did you arrive earlier?'

Using a past temporal adverb with definite time is not permitted in the perfect:

- (50) ***iwiir** pa taq a las quatro ee b'ee-naq pa ja
 yesterday PREP DISTR P DET four 3PLABS go-PERF PREP house
 (*'Yesterday at four o'clock they have gone home.')

Future temporal adverbs are allowed when the accompanying verb is incomplete:

21. The perfect *ruk'a'm b'iik* in (47) is the predicate of a headless relative clause.

22. The perfect *ruk'a'm* in (58) is atelic and an extended now perfect.

23. It is not possible to translate (49) into English as a perfect.

- (51) ee ok-inaq chi lee ee ixoq-iib' pa k'ayib'al
 3PLABS enter-PERF already DET PLU woman-PL PREP market
 areetaq k-ee-q-il chwe'q
 when INC-3PLABS-1SERG-see tomorrow
 'The women will have already entered the market when we see them
 tomorrow (Mondloch 1978:134).'

Adverbs of motion can be used with K'ichee'an perfects (52), (53). Motion adverbs target the perfect's activity, and accordingly, are ungrammatical with resultatives.²⁴

- (52) no'jimal ee b'-inaq pa ch'iich' pa San Pedro la Laguna
 slowly 3PLABS go-PERF PREP car PREP S.
 'They have gone slowly by car to San Pedro la Laguna.'
- (53) aninaq uj b'iin-inaq pa nim-alaj k'ay-i-b'al
 quickly 1PLABS walk-PERF PREP big-INT buy-SFV-LOC
 'We have walked quickly to the main market.'

Other linguistic pointers can assist in determining whether the K'ichee'an perfect is a perfect. Bybee et al. (1994:54) suggest that anteriors (perfects) are "often accompanied by the relational adverbs 'already' and 'just'." Michaelis (1996) claims that the adverb phrases "*already* and *still* express the presence of a state at a given reference time," and that "the contrast between *already* and *still* [i]s one involving the presence versus absence of a transition at some time prior to reference time."

The adverb phrase *chik* 'already' is routinely used with the K'ichee'an perfect, particularly with the 'pluperfect,' where it is used to distinguish the pluperfect from the 'present,' and is used even with the 'future perfect.'

In addition, the adverb *still* (54) is an established test for distinguishing resultatives from perfects (Nedjalkov & Jaxontov 1988:15–6):

- (54) a. 'She is (still) gone.' RESULTATIVE
 b. 'She has already/just/*still gone.' PERFECT

The adverb *maja'an* 'still not' tests for perfects, and *k'a* 'still' tests for resultatives:

- (55) maja'an ee b'ee-naq (56) *k'a ee b'ee-naq
 NEG.still 3PLABS go-PERF still 3PLABS go-PERF
 'They have still not gone.' (*'They have still gone.')

We infer from data in section 3.3 that the perfect is a perfect, not a resultative.

24. *b'eenaq/b'inaq* 'gone' < b'ee 'go', -inaq perfect.

4 Towards an analysis

4.1 Contesting previous proposals We discuss why the approach advocated in this paper is preferred to previous accounts of the perfect. Some of Dayley’s (1985) claims are either contradictory or improbable (see (8) & (9)). For one, the perfects host subjects marked with absolutive AMs, except for the solitary case of the ‘transitive’ perfect, where the object is supposedly referenced by the absolutive AM. *Prima facie*, it is counterintuitive and inconsistent, particularly when possessed perfects have been shown to be nominals (17). Next the *-oon* perfect suffix marks both an intransitive non-verbal adjectival predicate (8) and a transitive verb (9). This configuration is highly unlikely in K’ichee’an where differentiating transitivity from intransitivity is paramount. Dayley (1985:73) himself states that:

[i]n Tz’utujil there is a very important morphological distinction between *intransitive verbs* (IVs) and *transitive verbs* (TVs) with respect to their inflection as well as to their derivational possibilities.

The *-Vm* perfect licences a by-phrase (57a). We argue that (57a) and (57b) are identical in truth-conditional terms, although not in syntactic nor in informational structural terms. The proposition that (57a) is intransitive while (57b) is transitive simply because of the addition of the prefixed possessive AM is again improbable: they are one-place intransitives. These data show that the *-Vm* perfect is syntactically indistinguishable from the morphologically marked *-tal* stative passive (62):

- (57) a. at il-om (w-umal in)
 2SABS see-PERF 1SPOSS-by 1SPRO
 ‘You are the *person-who-has-been-seen* (by me).’
- b. at w-il-oom (*[w-umal in])
 2SABS 1SPOSS-see-PERF 1SPOSS-by 1SPRO
 ‘You are **my** *person-who-has-been-seen* (*[by me]).’

Although the descriptivists interpret perfects such as (57b) and (58) as binary GF transitives (cf. (19)), we contend they instead represent a one-place intransitive non-verbal predicate with two argument roles. The matrix clause’s subject in (58), *lee chiim*, is referenced by the third person absolutive AM, \emptyset_j . The clause-initial DP, *lee nu-jii*, is both a possessor and an external topic, an example of “external possession” (Aissen 1999:178). The DP agrees with the third person singular possessive pronoun *r-*, prefixed to the perfect-marked nominal *-uk’a’-m*:

- (58) lee nu-jii’_i \emptyset_j r_i-uk’a’-m lee chiim_j
 DET 1SPOSS-son.in.law 3SABS 3SPOSS-carry-PERF DET bag
 areetaq x-oopan ch-u-wa w-o’ch
 when COM-arrive PREP-3SPOSS-at 1SPOSS-house
 ‘As for my son-in-law_i, the bag_j is his_i *thing-that-has-been-carried*
 when he_i arrived at my house.’

Mondloch's analysis of the grammatical functions of (58) is shown in *a.*, while the analysis proposed in this paper is shown in *b.*:

- (59) *a.* *lee nujii'* = subject, *ruk'a'm* = verb, *lee chiim* = object
b. *lee chiim* = subject, *ruk'a'm* = possessed noun, *lee nujii'* = ext possessor

The grammatical subject, *lee ak'alaab'* 'the children' in (60), agrees with the absolutive AM *ee*, and is the only possible subject in the sentence. Compare (60) with (51): the prefixed possessive AM *qa_j-* is not the subject:²⁵

- (60) *ee_i* *qa_j-mul-im* *chi* *lee ak'al-aab'_i* *pa* *ja*
 3PLABS 1PLPOSS-gather-PERF already DET child-PL PREP house
areetaq k-ee-ul *lee ki-naan*
 when INC-3PLABS-arrive DET 3PLPOSS-mother
 'We will have already gathered the children in the house when their mothers arrive (Mondloch 1978:127).'

4.2 Passives We review the K'ichee' passive in light of our claim that the *-Vm* perfect is a passive. K'ichee' has three morphologically marked passives: standard passive, vowel ablaut/-(*V*)*x* (61); completive passive, -(*i*)*taj* (35); and stative passive, -(*i*)*tal* (62).²⁶ While the standard and completive passives are verbs, the stative passive is a participial adjective, and uses the same NVP syntactic configuration as the perfect. All three passives license *-umaal* by-phrases and intransitive phrase final suffixes (IPF), the latter normally seen only on verbs and positional adjectives (*-l/-r*).²⁷ Note that the completive passive, a verb, and the stative passive, a NVP, both use the same passive morphology (*-ta*). Stative passive participial adjectives are not syntactically, not morphologically, not semantically the same as verbal passives. Though the data below gloss similarly, the stative passive represents the state achieved by the verb's action, whereas the passive focuses on the action itself:

- (61) *k-uj-iil* *k-umaal* (62) *uj* *il-ital* *k-umaal*
 INC-1PLA-see:PASS 3PLPOSS-by 1PLABS see-STAT.PASS 3PLPOSS-by
 'We are seen by them.' 'We are seen by them.'

4.3 The Proposal We show that the K'ichee'an perfect is a perfect. We contend that the K'ichee'an perfect has been grammaticalized as a stative non-verbal predicate, but one that, nonetheless, retains a verb's argument structure. This is not surprising because the proto-Indo-European (PIE) perfect (Beekes 1995) and the

25. (60) 'The children_i are our_j ones_i-who-will-have-already-been-gathered in the house when their_i mothers arrive.'

26. *-taj* < *-ta* passive, *-j* inchoative; *-tal* < *-ta* passive, *-l* positional (Larsen 1988).

27. The *-umaal* by-phrase, formally a possessed noun, is traditionally interpreted as a preposition syntactically. We suggest it is better analysed as a secondary predicate, a possessed nominal NVP.

English perfect (Katz 2003), amongst others, are considered statives. The absolutive AM is always cross-referenced as the grammatical subject in all non-verbal predicates, including perfects and positionals. The perfect consists of two different parts-of-speech: a deverbal participial adjective, and a deverbal possessed nominal.

Participial adjectives, which include the positional adjectives (Duncan 2013), differ from standard adjectives in that participial adjectives are excluded from the derivational paradigm of adjectives (Dayley 1985, Larsen 1988). That is, abstract nouns, intransitive inchoatives, and causatives (see (39)) can be derived from standard adjectives, but not from participial adjectives. The latter also never take the attributive suffix used on many attributives, nor the degree suffix (Larsen 1988).

It is generally held that participles in matrix clauses cannot act as finite verbs without a supporting infrastructure.²⁸ One LFG analysis of auxiliary verbs assumes that auxiliaries lack the PRED attribute, and provide only inflectional TAM attributes. Thus the participle of the analytic construction is understood as the ‘finite’ PRED-supplying verb (Bresnan 2001:78, King 1995:225–8). Moreover, if we accept that verb-derived deverbal participles can themselves be verbs, V_{Part} (Bresnan 1982:23), or alternatively, are category-neutral for attributive/predicate adjectives and verbs $[V_{Part}]_{A/V}$ (Kibort 2005), then the K’ichee’ an perfect cannot be a participle.

The relationship between the derived adjectival and nominal perfects can be accounted for in several ways. A lexical process operates on the adjective to derive a nominal, while a second lexical process operates on the nominal to add a POSS function to its argument list. An alternate approach is to assume that the perfect in its uninflected derived form remains underspecified as an adjective or nominal.²⁹ The particular category is then realized according to whether the derived form is possessed or unpossessed. Finally the perfect is expressed using two different morphemes: *-inaq* and *-Vm*. In the former, themes map to the grammatical subject. In the latter, themes remap to grammatical subjects, and optional agents remap to the perfect’s possessive pronoun, or else, to the governed object in the by-phrase.

4.4 Discussion The literature on the perfect tense-aspect is vast. We review definitions of the perfect, and then propose an explanation of the perfect in the context of discourse. The standard definition of the perfect is a “form that expresses an action (process, or state) in the past which has continuing relevance for the present” (Nedjalkov & Jaxontov 1988:15). McCoard (1978) introduced the notion of current relevance, which identifies the time of relevance of the perfect. Bybee et al. (1994:54) claim that the perfect is relational and “signals that the situation occurs prior to reference time and is relevant to the situation at reference time.”

Viewpoint aspect reflects the “different ways of viewing the internal temporal consistency of a situation” (Comrie 1976:3). This raises the issue that our English glosses of Mayan data are not aspectual, but tensed. This approach is traditional in Mayan studies because of the awkwardness of aspectual glosses in English.

28. We assume also that hosting a subject is not a sufficient condition for ‘finiteness.’

29. Based on Kibort’s (2005) proposal for the adjective–participle conversion rule.

In his temporal model of tense-aspect, Reichenbach (1947) innovated the concept of reference time (R) including it with speech time (S) and event time (E). In his model, the perfect is construed as anterior $E < R$ and posterior $R < E$, such that $E \neq R$ is true (Kibort 2007). A concern with Reichenbach's approach is that its account of viewpoint aspect is inadequate. A more recent and popular semantic framework is Klein's (1994), whose conception of temporality and tense-aspect is refactored to a set of relations between intervals of time. TT, as an interval of time, is the declaration or proposition of a sentence, whereas TSit represents an interval of time during which the event itself takes place. Consequently Klein interprets viewpoint aspect—as opposed to Vendler's (1957) lexical aspect—as a relation between topic time (TT) and situation time (TSit). Thus Klein's anterior perfect is construed as $TSit < TT$, and posterior perfect as $TT < TSit$. Notwithstanding this, the semantics and pragmatics of the perfect are extremely complex with multiple avenues of analysis, and will not be pursued here.

Nevertheless we address the narrative use of the K'ichee'an perfect here. The English PP, well-known not to permit past temporal modifiers, also does not permit a sequence of perfects in discursive narrative (Bybee et al. 1994, Nedjalkov 1988). The default use of the perfect is to insert a stative into discourse (Nishiyama & Koenig 2004, Parsons 1990). Whereas event predicates advance narrative, perfects do not, rather perfects function as backgrounding devices. The perfect is a rhetorical device whose role is to improve the connectedness and cohesion of discourse.

We contend that the K'ichee'an perfect mirrors this behaviour in narrative. In our analysis, the perfect in a single sentence occurs either as an isolated predicate, or else, in combination with a verb, but never in a locally adjacent sequence of perfects. Consider the bi-clausal sentence in (58). The first clause is headed by the possessed nominal perfect, and the second headed by a verb marked for completive aspect. The perfect, which introduces the state of 'bag-carrying,' provides a background to the processual event of the sentence, the arrival of the son-in-law at the house.

Functionally the default configuration of the predicative perfect's lexical subject is that it agrees with absolutive AM, has properties of proto-patients, and immediately follows the perfect (58). But the lexical subject can also precede the perfect (47), and, on occasion, there is no lexical subject (46). The default configuration of the predicative perfect's lexical possessor is that it agrees with the possessive AM, precedes the perfect often as external topic, and has properties of proto-agents (58). But the lexical possessor may follow the perfect (38), and, on occasion, there is no lexical possessor (14). In discourse, the perfect's lexical possessor tracks the protagonist or primary participant of the current sentence or adjacent sentence.

4.5 Analysis We propose argument structures for the K'ichee'an perfect using Kibort's (2007, *inter alia*) revised Lexical Mapping Theory (LMT). The argument structure of the root intransitive *-inaq* perfect (53) is shown in (63), and of the completive passive *-inaq* perfect (35) is shown in (64):

(63)	theme	(64)	agent	theme
	<i>b'iin-inaq</i>		<i>b'antaj-inaq</i> _{COMPASS}	
	arg ₁		arg ₁	arg ₂
	-o		-o +r	-r
	SUBJ		(OBL _{AGT})	SUBJ

The argument structure of the DTJ antipassive *-inaq* perfect in (36) with an optional demoted patient in a dative prepositional phrase is shown in (65). The argument structure of the transitive stem actor focus *-inaq* perfect in (41) is shown in (66):³⁰

(65)	theme	patient	(66)	theme	patient
	<i>kunan-naq</i> _{AP}		<i>ilow-inaq</i> _{AF}		
	arg ₁	arg ₄	arg ₁	arg ₂	
	-r	-o	-o	-r	
	SUBJ	(OBL _{DAT})	SUBJ	FN _Θ	

The argument structure of the passive *-Vm* perfect with an optional remapped demoted agent in a by-phrase from (57a) is shown in (67), and with a remapped agent to the possessive pronominal prefix is shown in (68):

(67)	agent	theme	(68)	agent	theme
	<i>il-om</i> _{PASS}		<i>wil-om</i> _{PASS}		
	arg ₁	arg ₂	arg ₁	arg ₂	
	-o +r	-r	-o	-r	
	(OBL _{AGT})	SUBJ	POSS	SUBJ	

The single-tier analysis of predicates (Nordlinger & Sadler 2007) is rejected because the possessed predicate perfect would require the complex functor ‘carry-thing/person’. And because the NVP perfect is intransitive subcategorizing for a single GF in the semantic form, the double-tier approach with the closed complement PREDLINK is also rejected. We adopt the double-tier approach, using a constructional analysis (Dalrymple et al. 2004:192), with annotated phrase-structure rules, virtual copula ε , XCOMP open complement, and (raised) subject (69):

(69) S	→ DP	ε	A ∨ N
(↑ SUBJ) = ↓	(↑ PRED) = ‘ \emptyset -be(↑ XCOMP)SUBJ’	(↑ XCOMP) = ↓	
	(↑ SUBJ) = (↑ XCOMP SUBJ)	((↑ XCOMP POSS)	
		= (↑ ADJ))	

30. For FN_Θ, see Duncan (2013:Fig. 8)

Simplified c-structure (Fig. 1) & f-structure (Fig. 2) represent the data in (58).^{31,32,33}

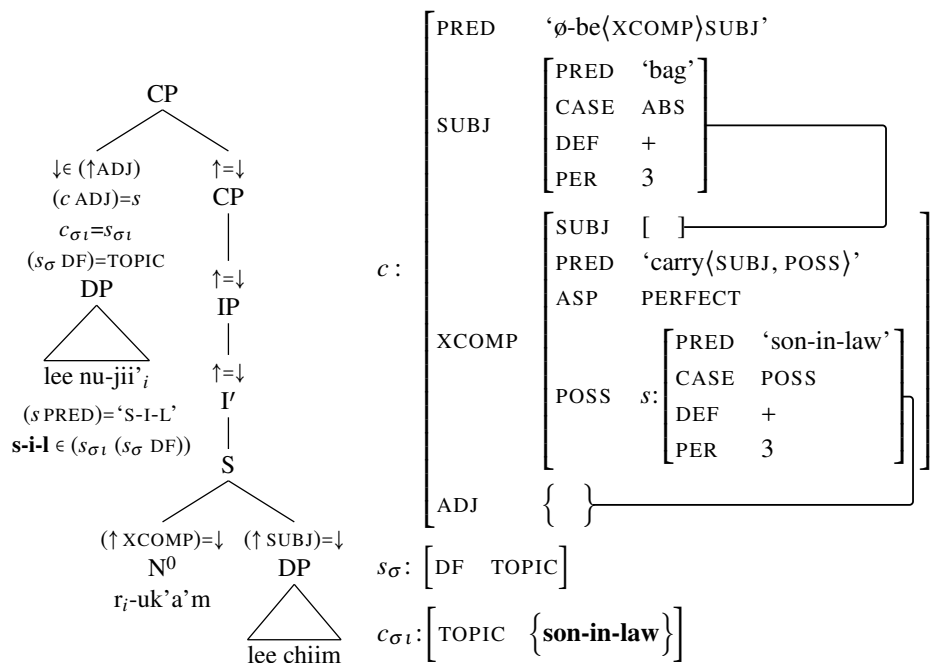
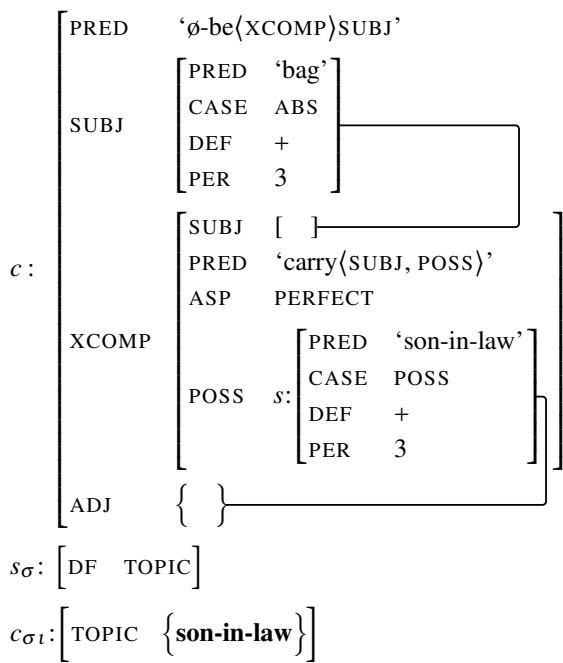


Figure 1 *lee nu-jii' ruk'a'm lee chiim*

Figure 2 *f-str: lee nu-jii' ruk'a'm lee chiim*



Partial lexical entries of *-inaq* perfect (18)/*-inaq* suffix are shown in (70).^{34,35}

- (70) *b'iininaq*, A (↑ PRED) = 'walk(SUBJ)'
 (↑ SUBJ PRED) = 'Pro' *-inaq*, Suff (↑ ASP) = PERF
 (↑ SUBJ NUM) = 1 @NOTV(STEM)
 (↑ SUBJ CASE) =_c ABS (↑ FIN) = -
 STEM_{IV} = +

Partial lexical entries of the *-Vm* perfect (58)/*-Vm* perfect suffix are shown in (71).³⁶ The possessor is optional as is the demoted agent in the passive's by-phrase:

- (71) *r-uk'a'm*, N (↑ PRED) = 'carry(SUBJ, POSS)'
 (↑ SUBJ PRED) = 'bag' *-Vm*, Suff (↑ ASP) = PERF
 (↑ SUBJ CASE) =_c ABS @NOIV(STEM)
 (↑ POSS PRED) = 'son-in-law' (↑ FIN) = -
 STEM_{TV} = + ({ (↑ POSS) | (↑ OBL_{AGT}) })

31. For analysis of the c-structure of the NVP, see Duncan (2013).

32. Information structure 'semantic' analysis of TOPIC is based on Dalrymple & Nikolaeva (2010).

33. The c-structure in Fig. 1 is indexed according to constituent indexing in (58).

34. @NOTV(STEM): 'no transitive verb stem - except AF.'

35. We exclude the non-predicative LEs of the perfect because they are tangential to our argument.

36. @NOIV(STEM): 'no intransitive verb stem.'

5 Conclusion

Previous accounts of the perfect tense-aspect in the K'ichee'an languages have concluded that the category or part-of-speech of the perfect is a verb, or less often, a participle. We have presented empirical support for the contention that the perfect is expressed using either a deverbal participial adjective or a deverbal possessed nominal in the form of a detransitivized non-verbal predicate. It has been shown that the perfect is always expressed as a one place intransitive but that it, nonetheless, retains the capacity to express two argument roles. It has also been shown that the K'ichee'an perfect includes various semantic types, including the perfect of result and the experiential perfect. Temporal restrictions that constrain the perfect have also been included. We have shown that the perfect is a perfect, not a resultative. Analyses have been implemented using the syntactic architecture of LFG. Future research should undertake semantic and pragmatic analyses of the perfect.

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