A Result Nominalization Analysis of the Kaqchikel Periphrastic Perfect

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1. Introduction

The paper discusses a perfect construction found in Kaqchikel, a Mayan language spoken in Guatemala. In Kaqchikel, perfect is derived from transitive verbal stems using the suffix *-on* or its variant *-om* (in the Patzún variety, which the data come from, and in other dialects, respectively). As shown in (1a), on the surface perfect closely resembles clauses with a non-perfect finite verb (1b).[1]

(1) a. Röj e-qa-loq'-on rije'.
we ABS3PL-ERG1PL-buy-NMZ they
'We have bought them.'

b. Röj x-e-qa-loq' rije'.
we PFV-ABS3PL-ERG1PL-buy they
'We bought them.'

The construction is mentioned in existing descriptive grammars as 'participio perfecto' (García Matzar and Rodríguez Guaján 1997), however aside from a couple of examples no analysis has been proposed. Various predicates that receive a perfect interpretation and are derived using a suffix cognate with *-on* are found in other Mayan languages; consider, for instance, *-oon* items in Tz'utujil that denote a resulting state (Dayley 1981) or so-called 'perfect passive participles' in K'iche' marked with *-oom* (Larsen 1988). As is the case with Kaqchikel, perfect clauses in these languages have not been examined in depth, with the exception of Larsen (1988), who studied perfect in K'iche' and proposed that it should be analyzed separately from finite verbs, after having noticed several differences between perfect forms and non-perfect verbal predicates.

Following Larsen's line of research and providing novel evidence from Kaqchikel, I propose that perfect in Mayan is not synthetic but periphrastic, that is, it does not involve an aspect marked finite verb. I argue that perfect clauses, such as (1a), shall be analyzed as nominal predication where a deverbal result nominal is predicated of the matrix subject, usually interpreted as Theme or Patient. Agent, when present, is base-generated inside the predicate nominal but can later move to a topic position at the left periphery of the clause. Thus, the accurate translation of (1a) should be 'They are [the product/result of our buying]'.

That the *-on* items are nouns explains why they pattern with nominal predicates and not with non-perfect finite verbs when it comes to their morphosyntactic properties, such as the obligatory absence of a Tense-Aspect prefix, the optionality of an external argument (Agent), the set of applicable ergative prefixes, and the acceptable word orders.

I further discuss the internal structure and the semantics of the deverbal result nominals in Kaqchikel, adopting and elaborating Moulton's (2014) analysis developed based on data from English, whereby the

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[1] Glossing abbreviations: ABS = absolutive, AP = antipassive, CAUS = causative, CL = classifier, DET = determiner, IPFV = imperfective, NEG = negation, NMZ = nominalizer, PASS = passive, PFV = perfective, PL = plural, PREP = preposition, PROG = progressive, RN = relational noun, SG = singular, TV = (derived) transitive.

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nominalizer combines with an extended verbal projection and existentially closes the event variable to create a result noun. An important difference between the nominalizing functional head *-on* in Kaqchikel and those in better studied Indo-European languages is that *-on* is more flexible in terms of s-selection, as it can combine not only with a root projection but also with an extended vP where Agent is introduced. Nevertheless, it always has the same semantic function, unlike for instance many nominalizers in English that can be used to create either result or event nouns, as in *quick construct**ion** of the building – several tall construct**ion**s.*

The research is conducted within the Distributive Morphology framework. The data presented in the paper were collected in 2018–2022 during elicitation sessions with four bilingual native speakers of Kaqchikel and Spanish, who live in Patzún, Chimaltenango, Guatemala.

The paper proceeds as follows. Section 2 describes the main semantic and morphosyntactic properties of the perfect construction and provides evidence for perfect forms being nouns and not finite verbs. Section 3 sketches out a formal analysis for perfect clauses as involving a nominal predicate (3.1), discusses the internal structure of *-on* items and the function of the nominalizer *-on* (3.2), and demonstrates that the latter can select as its complement either a root projection or a bigger vP with Agent (3.3). Section 4 concludes the paper.

2. Perfect construction as nominal predication

2.1. Kaqchikel morphosyntax

Kaqchikel is a Mayan language from the Quichean-Mamean (Eastern) branch. It is spoken primarily in central Guatemala by approximately 410.000 speakers, most of whom are bilingual in Kaqchikel and Spanish (Eberhard et al. 2022), and its status is described as vulnerable (Moseley 2010). Similarly to other Mayan languages, it is a head-marking, morphologically and syntactically ergative language with rich verbal and poor nominal inflectional morphology and frequent *pro*-drop. The unmarked word order in Kaqchikel is VOS, however speakers of the Patzún variety prefer the SVO order (García Matzar and Rodríguez Guaján 1997; Patal Majzul et al. 2000).

In finite clauses tense is not expressed separately and a perfective/imperfective Tense-Aspect prefix is used instead. Both the subject and the direct object are cross-referenced by agreement prefixes on the verb (2a), with the standard order of morphemes being I/PFV-ABS(-ERG)-ROOT(-CAUS-PASS/AP-TV). The paradigm of agreement prefixes is given in Table 1; as shown in (2), the same set of prefixes is used to encode ergative subjects and possessors in a DP.

(2) a. Röj n-Ø-qa-tz’ët rija’.
we IPFV-ABS3SG-ERG1PL-see (s)he
‘We see him/her.’

b. qa-tz’i’ / q-ochoch
ERG1PL-dog ERG1PL-house
‘our dog’ / ‘our house’

Table 1: Agreement markers

	1SG *rïn*	2SG *rat*	3SG *rija’*	1PL *röj*	2PL *rïx*	3PL *rije’*
ERG	nu/in(w)/n(w)/w	a(w)	r(u)/u	q(a)	i(w)	k(i)
ABS	in	at	Ø	oj	ix	e

2.2. Perfect construction: Interpretation

Kaqchikel *-on* predicates receive a resultative perfect interpretation, a state reading, and are usually used as translation equivalents to present perfect *haber* + participle examples in Spanish. They typically express complete events that took place before the time of speech but have results that hold at that point. Typically for perfect, *-on* predicates are compatible with *already*-type modifiers and temporal adjuncts such as ‘in ... hours’, as illustrated in (3).

(3) a. Röj e-qa-loq’-on yan rije’.
we ABS3PL-ERG1PL-buy-NMZ already they
‘We have already bought them.’

b. Rije’ e-loq’-on pa oxi’ ramaj.
they ABS3PL-buy-NMZ PREP three hour
‘They have been bought in three hours.’

Unlike verbal forms with an imperfective or perfective prefix, which are usually interpreted as merely present/past tense, respectively, the *-on* clauses under consideration cannot be continued with '... but we will/did not finish' because of the complete resultative nature of their interpretation (4).[2]

(4) a. X-oj-pon-on pero man x-Ø-qa-k'ïs ta.
PFV-ABS1PL-bake-AP but NEG PFV-ABS3SG-ERG1PL-end NEG
'We baked but did not finish it.'

b. *Qa-pon-on ri wäy pero man x-Ø-qa-k'ïs ta.
ERG1PL-bake-NMZ DET bread but NEG PFV-ABS3SG-ERG1PL-end NEG
Intended: 'We baked but did not finish it.'

Likewise, these clauses cannot be embedded under a phasal verb, such as 'begin' or 'finish', and under the progressive *-ajin*, as shown in (5).

(5) a. X-Ø-qa-chäp x-e-qa-kan-uj.
PFV-ABS3SG-ERG1PL-begin PFV-ABS3PL-ERG1PL-search-TV
'We began searching for them.'

b. *X/n-Ø-qa-chäp e-qa-kan-un.
PFV/IPFV-ABS3SG-ERG1PL-begin ABS3PL-ERG1PL-search-NMZ
Intended: 'We began searching for them.'

c. Y-oj-ajin y-e-qa-kan-uj.
IPFV-ABS1SG-PROG IPFV-ABS3PL-ERG1PL-search-TV
'We are searching for them.'

d. *Y-oj-ajin e-qa-kan-un.
IPFV-ABS1SG-PROG ABS3PL-ERG1PL-search-NMZ
Intended: 'We are searching for them.'

Having thus established that the *-on* examples, such as given above, shall indeed be treated as resultative perfect, the next question that I ask is whether an *-on* item should be analyzed as a finite form of the corresponding verb. In other words, is the suffix *-on* inflectional, a spell-out of a functional head on the clausal spine (likely Aspect), or derivational, changing the category of the stem that it combines with? The next section addresses this question by examining morphosyntactic properties of *-on* predicates and demonstrates that they pattern not with finite verbs but with predicatively used nouns.

2.3. Perfect construction: Verbal vs nominal properties

I begin this section by describing general morphosyntactic properties of the *-on* items and comparing them to verbal and nominal predicates to show that they pattern with the latter. After that in Section 2.4 I present additional empirical support for the idea that *-on* is a derivational suffix that creates nouns out of verbal stems.

Perfect *-on* items in Kaqchikel can be derived from either inherently transitive verbal roots (that is, roots that require an internal argument) or causativized verbs, as shown in (6).[3] As can be seen in these examples, the alignment pattern in perfect clauses is the same as in non-perfect transitive clauses: Agent is encoded as ergative and Theme as absolutive.

[2] As mentioned in Section 2.1, Kaqchikel allows *pro*-drop of pronominal arguments. Therefore, most of the examples presented in the paper contain silent Agents and Themes, cross-referenced by ERG/ABS prefixes on the predicate. The speakers that I consulted reported no significant difference between sentences with covert and overt arguments.

[3] In Patzún Kaqchikel the 'perfect' marker (which I show to be a nominalizer) looks identical to the antipassive/agent focus marker. However, the two are distinct items, which becomes evident in other varieties of the language, as documented in grammars (García Matzar 2007): *-om* vs *-on*/*o* respectively.

(6) a. *(x-)e-qa-loq'
PFV-ABS3PL-ERG1PL-buy
'We bought them.'
b. (*x/y-)e-qa-loq'-on
PFV/IPFV-ABS3PL-ERG1PL-buy-NMZ
'We have bought them.'
c. *(x-)oj-ki-kam-isa-j
PFV-ABS1PL-ERG3PL-die-CAUS-TV
'They killed us.'
d. (*x/y-)oj-ki-kam-isa-n
PFV/IPFV-ABS1PL-ERG3PL-die-CAUS-NMZ
'They have killed us.'

However, as indicated by the ungrammaticality marks in (6), perfect predicates appear to be exceptional in that they strictly prohibit (im)perfective Tense-Aspect marking, which is obligatory for all non-perfect verbs. In this respect perfect clauses pattern with those with a nominal predicate; compare (6b) and (6d) to (7), where a property-denoting noun ('doctor') is predicated of a subject DP ('they') and a Tense-Aspect prefix must be absent.

(7) (*x/y-)e'-aq'omanela'
PFV/IPFV-ABS3PL-doctors
'They are doctors.'

Another difference between perfect and non-perfect transitive clauses is that in the former Agent is optional. In non-perfect transitive clauses Agent can only be omitted when the verb is passivized (8). In perfect constructions Agent can always be dropped together with the corresponding ergative prefix and no voice transformation is required. On the contrary, *-on* items are altogether incompatible with the passive suffix *-x* (9). In this respect Agent in perfect clauses resembles optional possessors in nominal predicates, illustrated in (10) in comparison to (7); recall also from Section 2.1 that both Agents and Possessors are cross-referenced by an ergative marker.

(8) a. X-e-qa-kam-isa-j.
PFV-ABS3PL-ERG1PL-die-CAUS-TV
'We killed them.'
b. X-e-kam-isa*(-x).
PFV-ABS3PL-die-CAUS-PASS
'They were killed.'

(9) a. E-qa-kam-isa-n.
ABS3PL-ERG1PL-die-CAUS-NMZ
'We have killed them.'
b. E-kam-isa-(*x-o)n
ABS3PL-die-CAUS-PASS-NMZ
'They have been killed.'

(10) E-q-aq'omanela'
ABS3PL-ERG1PL-doctors
'They are our doctors.'

With this in mind I conclude that in all regards perfect patterns with nominal predication: a Tense-Aspect marker must be absent and Agent is optional, similarly to Possessor. I propose that the *-on* items should be analyzed as nouns and not as verbal forms, and thus Kaqchikel perfect is periphrastic and not synthetic.

In particular, I argue that *-on* nouns are result nominals, adopting the categorization of deverbal nouns put forward by Grimshaw (1990), and that they are derived from verbal stems with a meaning 'a product or result of some action/event'. In perfect clauses examined in this paper a result *-on* noun is predicated of the Theme/Patient subject, as schematized in (11); a detailed structure is provided in Section 3. As I further discuss in Section 3.3, when present, Agent is thematically licensed within the verbal part but case-licensed as a regular possessor by a nominal functional head, which accounts for its optionality in the absence of passivization.

(11) a. [Theme ... [$_{nP}$ n *-on* [$_{vP/VP}$ (Agent) ...]]
b. Rije' e-loq'-on.
they ABS3PL-buy-NMZ
'They have been bought.' Literally: 'They are what someone bought.'

2.4. Perfect as nominal predication: Additional support

Under the assumption that the *-on* items in perfect clauses are nouns rather than verbs, we expect to see them also appear in typical nominal contexts, for instance, used as arguments and/or with modifiers typical for nouns. Indeed, as shown in (12a), *-on* result nouns, which describe a thing affected by some event, can be used as direct objects and be accompanied by determiners, numerals, and possessors, similarly to non-derived nouns (12b).

(12) a. X-Ø-qa-tz'ët [ri oxi' ru-loq'-on ri Maria].
PFV-ABS3SG-ERG1PL-see DET three ERG3SG-buy-NMZ DET Maria
'We saw the three things that Maria had bought.'
b. X-Ø-qa-tz'ët [ri oxi' ru-tz'i'/wuj' ri Maria].
PFV-ABS3SG-ERG1PL-see DET three ERG3SG-dog/book DET Maria
'We saw the three dogs/books of Maria.'

Another difference between nominal and verbal predicates concerns word order. As mentioned in the introduction, a standard word order in Patzún Kaqchikel finite clauses is SVO (subject topicalization), while the OVS order (object topicalization) is strongly dispreferred by native speakers (13). In turn, when a possessed noun is used as a predicate, either the subject or the possessor can be fronted (14).

(13) a. Ri umula' n-Ø-ki-tz'ët jun tz'i'.
DET rabbits IPFV-ABS3SG-ERG3PL-see one dog
'The rabbits see the dog.'
b. ??Jun tz'i' n-Ø-ki-tz'ët ri umula'.
one dog IPFV-ABS3SG-ERG3PL-see DET rabbits
Intended: 'The rabbits see the dog.'

(14) a. Ri alab'oni' e-r-aq'omanela ri Maria.
DET boys ABS3PL-ERG3SG-doctors DET Maria
'The boys are Maria's doctors.'
b. Ri Maria e-r-aq'omanela ri alab'oni'.
DET Maria ABS3PL-ERG3SG-doctors DET boys
'The boys are Maria's doctors.'

According to the speakers that I consulted, the usual word order in Kaqchikel perfect clauses is Agent-Predicate-Theme, but the order Theme-Predicate-Agent is also accepted. This becomes hard to explain if the *-on* items are finite verbs with Theme being a direct object. However, the data are unsurprising under the assumption that Theme is base-generated as the subject of a small clause and Agent as a possessor within the nominal predicate. In this case, we indeed expect (15) to pattern with (14) and not with (13).

(15) a. Ri Maria e-ru-tz'et-on ri alab'oni'.
DET Maria ABS3PL-ERG3SG-see-NMZ DET boys
'Maria has seen the boys.' Literally: 'The boys are what Maria saw.'
b. Ri alab'oni' e-ru-tz'et-on ri Maria.
DET boys ABS3PL-ERG3SG-see-NMZ DET Maria
'Maria has seen the boys.' Literally: 'The boys are what Maria saw.'

The pattern of ergative marking provides further support for analyzing perfect forms as nominal. As mentioned in Section 2.1, ergative and possessive in Kaqchikel share the paradigm, however, there is one exception. The first person singular markers *nu-* and *w-* cross-reference only possessors within a nominal

phrase but never external arguments in finite transitive clauses (Patal Majzul 2007). As demonstrated in (16), both of these prefixes are compatible with a perfect form but prohibited with, for instance, a completive verb.

(16) a. nu-tz'i' / w-achib'äl
ERG1SG-dog ERG1SG-photo
'my dog'/'my photo'
b. e-nu-loq'-on / e-w-atin-isa-n
ABS3PL-ERG1SG-buy-NMZ ABS3PL-ERG1SG-bathe-CAUS-NMZ
'I have bought/washed them.'
Literally: 'They are what I bought/washed.'
c. x-e-n/*nu-loq' / x-e-nw/*w-atin-isa-j
PFV-ABS3PL-ERG1SG-buy PFV-ABS3PL-ERG1SG-bathe-CAUS-TV
'I bought/washed them.'

These empirical observations point to one conclusion: the *-on* items belong to the category of nouns and *-on* is a derivational suffix, a nominalizer. In the next section I outline a formal analysis. Section 3.1 presents the structural representation for perfect clauses and Sections 3.2 and 3.3 focus on the internal structure of *-on* nominals, building upon Moulton's (2014) analysis of deverbal nominals as mixed categories created in syntax.

3. Formal analysis

3.1. Outline of the analysis

As shown in Section 2, the perfect construction patterns with nominal predication. Hence, I propose that the perfect forms shall be analyzed as deverbal result nouns with *-on* being a derivational suffix, a nominalizer; thus, Kaqchikel translation equivalents of such English examples as *We have bought them* more closely correspond to *They are what we bought* w.r.t. the underlying structure. In this section I sketch out a formal analysis for perfect clauses (3.1) and *-on* nouns (3.2 and 3.3).

Let us first take a closer look at finite clauses with a nominal predicate exemplified in (17).

(17) Rije' e(-q)-aq'omanela'
they ABS3PL-ERG1PL-doctors
'They are (our) doctors.'

In line with the literature on predication, in particular Bowers (1993) and Den Dikken (2006), i.a., I assume that a subject DP and a predicate (a PossP, nP, or NP) are put together in an asymmetrical small clause headed by a functional head, Rel(ator), as schematized in (18); see also Burukina (2019) and Levin et al. (2020) proposing similar structures for non-verbal predication in Kaqchikel and Tz'utujil, respectively. The small clause is then merged into the complement position of the T head. Since non-verbal predication is always stative, Tense-Aspect morphology is obligatorily lacking (Coon and Preminger 2009). Similarly to other Mayan languages, Kaqchikel does not have an overt copula (Patal Majzul et al. 2000); thus, both Rel and T remain silent. Finally, as can be seen in (17), the subject is obligatorily cross-referenced by an absolutive prefix on the predicate, with T assigning absolutive case, as usual (Coon et al. 2014).

(18) *Nominal predication*
$[_{TP}\ T\ [_{SC}\ \text{Theme}\ [_{Rel'}\ \text{Rel}\ [_{PossP/nP/NP}\ \ldots\ ]]]]$
$\llcorner$ ABS $\lrcorner$

The structure outlined in (18) matches perfect clauses, as shown in (19): a result *-on* noun in the complement position of a small clause is predicated of a subject DP merged in the specifier position, and the latter is then case-licensed by the T head.

(19) [$_{TP}$ *Rije'*$_i$ [$_{T'}$ *e* [$_{SC}$ t$_i$ [$_{Rel'}$ Rel [$_{nP}$ *loq'-on*]]]]]
they ABS3PL buy-NMZ
'They have been bought.' Literally: 'They are what someone bought.'

3.2. Internal structure of -on nominals: The function of the nominalizer

Turning the attention to the result nominals, I argue that they are mixed categories: they are formed in syntax and consist of a verbal core topped by several nominal projections, starting with the nominalizing nP; cf. for instance Bresnan (1997), Borsley and Kornfilt (2000), Alexiadou (2001), i.a., on English gerunds as mixed structures. The internal structure of *-on* nouns is schematized in (20); for the sake of simplicity I mark the root projection as VP and denote the internal argument as x_{int}.

(20) *Result nominals as mixed categories*
[$_{nP}$ n *on* [$_{VP}$ Root x_{int}]]

The analysis in (20) explains why the result *-on* nouns still have some verbal properties: for instance, they can co-occur with an overt Agent argument and with some temporal modifiers (Section 2.1). It should also be noted that the *-on* derivation is regular and very productive: so far I have found no transitive verb that could not be nominalized using the suffix *-on* and used as predicates in perfect clauses. This is unsurprising if the derivation is syntactic; however, we would expect to find more exceptions and/or idiomatic forms if it happened in the lexicon (cf. Reinhart and Siloni 2005).

The suffix *-on* is an exponent of the nominalizing n head. It combines with a root projection (VP in (20)) whose root has an event variable and an internal argument variable. Adapting Moulton's (2014) analysis for result nominals in English, I assume that the main function of the nominalizer *-on* is to existentially close the event argument. The internal argument variable is left intact, which yields an interpretation 'x such as there was an event that affected it.' A simplified denotation of the nominalizer is given in (21).

(21) *Existential closure of an event argument*
$[\![[\text{n}\exists]]\!] = \lambda P_{<e<s,t>>}.\lambda x.\exists e[P(x)(e)\ \&\ \text{time}(e) < t]$

As was shown in Section 3.3, result nominals derived with the suffix *-on* can be either predicates or arguments. In the first case, the nP is predicated directly of the subject DP, due to the presence of an x_{int} variable (Williams 1980). In the second case, a DP layer is added on top of the nP and the addition of a determiner renders the nominal type e.

3.3. External arguments in -on nominals

Finally, a few words must be said about the status of Agent that appears in perfect constructions and with *-on* nominals in general. Due to the limitation of space, in this paper I discuss only one strategy of introducing and licensing Agent with an *-on* noun, which is used most commonly in perfect clauses, and I refer the reader to Burukina (2022) for a detailed discussion of the other options.

In perfect clauses a possessor used with an *-on* nominal is interpreted as Agent of the nominalized event; the same is true for possessors of *-on* nouns used as arguments (Section 2.4). This suggests that the nominalizer *-on* can combine not only with a root projection (VP) but also with a larger verbal phrase where an external argument is introduced (vP). In other words, the same nominalizing head in Kaqchikel selects projections of various size. Let us discuss briefly what happens when the nominalizer *-on* selects a vP complement with an external argument thematically licensed in Spec,vP. In Kaqchikel transitive clauses Agents merged in Spec,vP are assigned ergative case by a higher Voice head, while absolutive is assigned by T (Coon et al. 2014). As evident by the absence of Voice and Tense-Aspect morphology ((6) and (9), Section 2.3), the verbal core in *-on* nominals cannot be larger than a vP; thus, an Agent DP, when present, must receive case from outside, otherwise it will remain caseless and the derivation will crash.

A source of case is available in the nominal part dominating the vP, namely the Poss head, which normally assigns ergative case to a possessor in Spec,nP (22).[4]

(22) *Result nominals with an external argument*

$[_{PossP}\ \text{Poss}\ [_{nP}\ \text{n}\ \textit{on}\ [_{vP}\ \text{Agent}\ [_{v'}\ \text{v}\ [_{VP}\ \text{Root}\ x_{int}\ ]]]]]$

ERG

Similar in-situ approaches to Agents in deverbal nominals are advocated by Borsley and Kornfilt (2000) and Alexiadou (2001 and elsewhere), i.a. Alternatively, Yoon (1996), van Hout and Roeper (1998), and Baker (2005) propose that argument positions in the verbal part of derived nominals are occupied by PROs that are controlled either by a proper possessor introduced in one of the nominal projections or by a matrix DPs. In Kaqchikel, Burukina (2021) examines the distribution of mixed event nominals derived from verbs using the suffix *-ik* and demonstrates that they likely involve control. A crucial piece of support for this comes from the fact that with *-ik* nominals Agents can be introduced as complex possessors, embedded within a larger phrase headed by the relational noun *(i)chin* (23). In case of a verbal predicate, demoted external arguments are never introduced by *(i)chin*; this excludes a base-generation analysis. Under the assumption that sideward movement from Spec,vP into a complex *(i)chin* phrase is impossible, a raising analysis is also eliminated. Placing PRO in the external argument position so that it is controlled by a higher DP solves the problem: *(i)chin* is akin to prepositions in Indo-European languages (Patal Majzul et.al. 2000; Ranero 2019) and cases of obligatory control from within a PP are well attested (as in *John pleaded with Mary to forgive him*).

(23) a. N-Ø-inw-ajo' [ri ru-tijo-x-ik
IPFV-ABS3SG-ERG1SG-want DET ERG3SG-teach-PASS-NMZ
[ri xta Maria] aninäq].
DET CL Maria quickly
'I want Maria to be taught quickly.'

b. N-Ø-inw-ajo' [ri tijo-x-ik
IPFV-ABS3SG-ERG1SG-want DET teach-PASS-NMZ
[r-chin ri xta Maria] aninäq].
ERG3SG-RN DET CL Maria quickly
'I want Maria to be taught quickly.' (a = b)

Interestingly, result *-on* nominals differ from event *-ik* nominals in that, according to the native speakers that I consulted, examples with an *(i)chin* possessor that can only be interpreted as Agent are not acceptable (24a-b). As further shown in (24c), such expressions become acceptable only if the complex possessor receives a non-agentive interpretation and refers to an owner, etc. The ungrammaticality of (24a-b) suggests that *-on* nominals resist the control strategy. Although at this point I cannot account for this difference between event and result nouns, the empirical observation is important and gives us new insight into the nature of deverbal nominalization.

(24) a. *Röj [oj-kam-isa-n [k-ichin (rije')]].
we ABS1PL-die-CAUS-NMZ ERG3PL-RN they
Intended: 'We have been killed by them.' Literally: 'We are those who they killed.'

b. *Rije' [e-loq'-on [q-ichin (röj)]].
they ABS3PL-buy-NMZ ERG1PL-RN we
Intended: 'They have been bought by us.' Literally: 'They are what we bought.'

[4] Note that, while most studies on nominalization in Mayan place possessors in Spec,nP, there is no common consensus on the mechanism of ergative case assignment in DPs. In the paper I assume that ergative is unanimously assigned via downward agreement in both the clausal and nominal domain, see also Imanishi (2014) for a similar proposal. However, Coon (2017) provides some support for Spec-Head agreement in Ch'ol DPs between a possessor in Spec,nP and the n head. At this point nothing hinges on the choice of a particular approach; what is important is that in mixed nominalizations in Kaqchikel the only case available is assigned in one of the higher nominal projections but not within the verbal part.

c. ri loq'-on [q-ichin (röj)]
DET buy-NMZ ERG1PL-RN we
'our thing that someone (else) bought'

4. Concluding remarks

The present paper examined the perfect *-on* construction in Kaqchikel (Mayan) that is mentioned in descriptive grammars but so far has received no formal analysis. I demonstrated that perfect clauses differ from non-perfect ones with a verbal predicate and exhibit morphosyntactic properties of nominal predication. I proposed that the Kaqchikel perfect is periphrastic: a deverbal result nominal, which may contain an Agent, is predicated of the Theme/Patient subject. This gives rise to a perfect interpretation, literally 'x is [product/result of (someone's) action].' I further discussed the internal structure of *-on* nominals as mixed categories created in syntax building upon Moulton's (2014) analysis, whereby the nominalizer existentially closes an event argument introduced by the root. Finally, I addressed the question of the status of Agents under nominalization and their licensing.

Analyzing Kaqchikel perfect as periphrastic and involving a non-verbal predicate opens a way to comparing the data to similar constructions found in other languages. To the best of my knowledge, the literature on periphrastic perfect has mostly focused on the distinction between *have*-perfect and *be*-perfect in European languages (Drinka 2003, i.a.). The following two ideas are reiterated: (1) the 'canonical pattern' of *be*-perfect involves a passive participle; see also Bešlin (2021), who demonstrates that all passive participles are adjectival, formed in syntax with the help of an adjectivizer, and (2) cross-linguistically *be*-perfect is often reserved for non-agentive verbs (Eide and Fryd 2021). The Kaqchikel perfect closely resembles *be*-perfect and yet there are some crucial differences: (1) Kaqchikel perfect involves a different category (a noun and not an adjective), and (2) it is not restricted to non-agentive verbs. This gives rise to the following questions: What follows from the difference in the categories (noun vs adjective)? and Why do some languages use adjectives and other languages use nominals in a similar constructions? I leave these issues open to be addressed by future research, which will closely examine different ways to derive stativity and a result interpretation.

References

Alexiadou, Artemis. 2001. *Functional structure in nominals: Nominalization and ergativity*. Amsterdam: John Benjamins.

Baker, Mark C. 2005. On gerunds and the theory of categories. Ms., Rutgers University.

Bešlin, Maša. 2022. Revisiting passive participles: Category status and internal structure. *Linguistic Inquiry*. Advance publication.

Borsley, Robert D., and Jaklin Kornfilt. 1999. Mixed extended projections. In *Syntax and semantics: The nature and function of syntactic categories 32* edited by Robert D. Borsley, 101–131. San Diego: Academic Press.

Bowers, John. 1993. The syntax of predication. *Linguistic Inquiry* 24: 591–656.

Bresnan, Joan. 1997. Mixed categories as head sharing constructions. In *Proceedings of LFG 97* edited by Mariam Butt and Tracy Holloway King, 1–17. Stanford: CSLI Publications.

Burukina, Irina. 2019. Reflexive functional head, verbal and nominal predicates. In *Proceedings of the 36th West Coast Conference on Formal Linguistics* edited by Richard Stockwell, Maura O'Leary, Zhongshi Xu, and Z.L. Zhou. 91–98. Somerville, MA: Cascadilla Proceedings Project.

Burukina, Irina. 2021. On the nature of arguments in event nominals. *Proceedings of the Linguistic Society of America* 6(1): 996–1008.

Burukina, Irina. 2022. A result nominalization analysis of the Kaqchikel periphrastic perfect. Talk presented at the 40th meeting of the West Coast Conference on Formal Linguistics (WCCFL 40), Stanford University, May 13–15, 2022.

Coon, Jessica. 2013. *Aspects of split ergativity*. Oxford: Oxford University Press.

Coon, Jessica. 2017. Little-v agreement and templatic morphology in Ch'ol. *Syntax*, 20(2): 101–137.

Coon, Jessica, Pedro Mateo Pedro, and Omer Preminger. 2014. The role of case in A-bar extraction asymmetries: Evidence from Mayan. *Linguistic Variation* 14(2): 179–242.

Coon, Jessica, and Omer Preminger. 2009. Positional roots and case absorption. In *New Perspectives in Mayan Linguistics* edited by Heriberto Avelino, Jessica Coon, and Elisabeth Norcliffe, 35–38. Cambridge, MA: MIT Working Papers in Linguistics 59.

Dayley, Jon P. 1981. *Tzutujil grammar*. Berkeley, Los Angeles, California: University of California Press.

Den Dikken, Marcel. 2006. *Relators and linkers: The syntax of predication, predicate inversion, and copulas*. Cambridge, MA: MIT Press

Drinka, Bridget. 2003. Areal factors in the development of the European periphrastic perfect. *Word* 54: 1–38.

Eberhard, David M., Gary F. Simons, and Charles D. Fennig (eds.). 2022. *Ethnologue: Languages of the world.* 25th edition. Dallas, Texas: SIL International. Online version: http://www.ethnologue.com

Eide, Kristin Melum, and Marc Fryd. 2021. The perfect volume: Papers on the perfect. In *The Perfect Volume* edited by Kristin Melum Eide and Marc Fryd, 1–40. Amsterdam, Netherlands: John Benjamins.

García Matzar, Lolmay Pedro Oscar. 2007. *Derivación de palabras en kaqchikel = Rujotayixik tzij pa Kaqchikel.* Guatemala: OKMA.

García Matzar, Lolmay Pedro Oscar, and José Obispo Rodríguez Guaján. 1997. *Rukemik ri Kaqchikel chi': Gramática Kaqchikel*. Guatemala City: Cholsamaj.

Grimshaw, Jane. 1990. *Argument structure*. Cambridge, MA: MIT Press.

Imanishi, Yusuke. 2014. Default ergative. Ph.D. dissertation, MIT.

Larsen, Thomas Walter. 1988. Manifestations of ergativity in Quiché grammar. Ph.D. dissertation, University of California, Berkely.

Levin, Theodore, Paulina Lyskawa, and Rodrigo Ranero. 2021. Optional agreement inSantiago Tz'utujil Mayan is syntactic. *Zeitschrift für Sprachwissenschaft* 39: 329–355.

Moseley, Christopher (ed.). 2010. *Atlas of the world's languages in danger*. 3rd edition. Paris: UNESCO Publishing. Online version: https://unesdoc.unesco.org/ark:/48223/pf0000187026

Moulton, Keir. 2014. Simple event nominalizations: Roots and their interpretation. In *Cross-linguistic Investigations of Nominalization Patterns* edited by Ileana Paul, 119–144. Amsterdam, Netherlands: John Benjamins.

Patal Majtzul, Filiberto. 2007. *Rusoltzil ri Kaqchikel: Diccionario bilingüe estándar Kaqchikel illustrado*. Guatemala: OKMA.

Patal Majzul, Filiberto, Lolmay Pedro García Matzar, and Carmelina Ixchel Espantzay Serech. 2000. *Rujunamaxik ri Kaqchikel chi': Variación dialectal en Kaqchikel*. Guatemala: Editorial Cholsamaj.

Ranero, Ranero. 2019. Voice mismatches in Kaqchikel sluicing: Consequences for syntactic parallelism. Ms., University of Maryland.

Reinhart, Tanya, and Tal Siloni. 2005. The lexicon-syntax parameter: Reflexivization and other arity operations. *Linguistic Inquiry* 36: 389-436

van Hout, Angeliek, and Thomas Roeper. 1998. Events and aspectual structure in derivational Morphology. In *MIT Working Papers in Linguistics* 32, 175–220. Cambridge: MITWPL.

Williams, Edwin. 1980. Predication. *Linguistic Inquiry* 11(1): 203–238.

Yoon, James Hye Suk. 1996. Nominal gerund phrases in English as phrasal zero derivations. *Linguistics* 34: 329–356.

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