NOMINALIZATION AND THE EXPRESSION OF MANNER IN K'ICHE'[1]

Telma Angelina Can Pixabaj and Judith Aissen
CIMSUR-UNAM and UC Santa Cruz
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1 Introduction

This paper focuses on manner/method questions in K'iche' (Mayan), questions whose English translations start with 'how', as in 'how did the woman cook the tamalitos?'. K'iche' (ISO 639: quc) is interesting in this regard because it appears to lack a wh expression which translates 'how'. The list of interrogative expressions in López Ixcoy (1997:215), for example, includes translations for 'who', 'what', 'where', 'when', 'why', and 'how much', but nothing for 'how'. The online K'iche' lessons produced by the University of Texas likewise give direct translations for the same set of expressions, but none for 'how' (University of Texas, n.d.).

There are several more complex constructions that are used to convey 'how' questions. Both Ajpacajá Tum et al. (1996:90) and Larsen (1988:324) translate 'how, what way' by *jas ub'aanik*, a complex expression consisting of *jas* 'what, which' plus a nominalized form of the verb *(b)'an* 'do'. This expression is not used productively in the dialect under study here (that of Santa Lucía Utatlán). A related expression, also not used widely in this dialect, is *jas modo* 'what way', with *modo* borrowed from Spanish. A third alternative, which *is* used productively, is discussed briefly in §5.

The construction we focus on here is the one illustrated by (1), which can be interpreted either as a question about the manner of cooking the tamalitos (evoking an answer like, 'quickly'), or about the method (evoking 'first she did this and then she did that').[2]

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[2] Abbreviations used in this paper: A1, 2, 3: Set A 1st, 2nd, 3rd person; ACT: active; ANAP: anaphoric; ANTIP: antipassive; B1, 2: Set B 1st, 2nd person; COMP: complementizer; COP: copula; CP: completive; CQ: content interrogative; DEM: demonstrative; DET: determiner; DIR: directional; DYN: dynamic; ERG: ergative; GEN: genitive; ICP: incompletive; INTR: intransitive; IPFV: imperfective; IRR: irrealis; LV: light verb; MSR: measure; MVT: movement; NEG: negation; NMLZ: nominalizer; NOM: nominative; PADV: pro–adverbial; PAR: particle; PL: plural; POSS: possessive;

(1) Jas utzakab'axik le   sub'   xu'an le ixoq?
    WH cook:NMLZ   the tamalito did   the woman
    'How did the woman cook the tamalitos?'

The structure of (1) is not obvious. The main verb in the translation ('cook') corresponds to a nominalized (nonfinite) form in the K'iche' *(utzakab'axik)*, which precedes the finite verb (*xu'an* 'did'). The nominalization looks like it might be the complement of *xu'an*, but the order (complement before main verb) is the opposite of what we would expect in a consistent head-initial language. Further, the wh expression *jas* usually means 'what', not 'how' in K'iche'. The basic questions then are these: what is the structure of (1)? and how does the manner/method interpretation arise from it? As we will show, the structure of (1) is built up out of more basic parts. Hence to resolve these questions, we need to understand the structure of those more basic parts and how they fit together.

    We begin with less complex versions of (1) which do not contain an explicit external (i.e., agentive) argument, as in (2). (2a) is well-formed and is interpreted as a matrix question. When embedded, as in (2b), it is interpreted as an interrogative complement.

(2) a. Jas   utzakab'axik   le   sub'?
        WH   cook:NMLZ   the   tamalito
        'How are the tamalitos cooked?'
    b. Xreta'maaj   [jas utzakab'axik le   sub'].
        she.learned   WH cook:NMLZ   the tamalito
        'She learned how to cook the tamalitos.'

The possibility of (2a) as a matrix question is surprising because it contains no finite verb. On the other hand, (2b) looks parallel to its English translation, 'She learned how to cook the tamalitos'. The structure of the English is shown in (3), where the matrix verb *(learned)* selects a nonfinite interrogative complement whose unpronounced subject (PRO) is controlled by the matrix subject. The wh adverb *how* moves to clause–initial position within the complement from a lower position within the clause (assumed here to

be adjoined to VP).

(3) [she learned [CP how [TP PRO to [VP *t* [VP cook the tamalitos]]]]]

However, we will show in §3 that this analysis cannot be extended to examples like (2b) in K'iche'. In particular, we will show that *jas* cannot mean 'how', that *jas* cannot undergo wh-Movement within a nonfinite clause in K'iche', and finally that the complement in (2b), as well as the clause in (2a), is actually finite, not nonfinite. We will argue that in (2a), K'iche' resorts to a simple copular structure to express a 'how' question, one that can be paraphrased roughly as 'what is the manner of cooking the tamalitos?', with *jas* being a nonverbal predicate which takes a manner nominalization as its subject. This structure can be embedded as an interrogative complement, as in (2b).

The structure we will propose for (2a) has significant limitations. The predicate being nonverbal, it does not make the temporal, aspectual and modal (TAM) distinctions that are signaled by verbal morphology. Further, it is based on a nominalization which does not permit the overt expression of its external argument. Hence, the construction requires further elaboration to specify that argument. In §4, we show how the basic structure in (2a) can be expanded both to express TAM distinctions and to specify an external argument. In this, the finite verb in (1), *xu'an* 's/he did', plays a key role.

2 Background

K'iche' is an Eastern Mayan language spoken in Guatemala by more than one million people in 78 municipalities (Guatemala National Statistics Institute 2018). It is a member of the K'ichean subgroup and forms a further subgroup *(K'ichean Proper)* with several closely related languages, including Kaqchikel and Tz'utujil. K'iche' comprises four or five dialect regions (Kaufman, 1974, 1975). Basic sources on the language include Mondloch (1981), Larsen (1988), Kaufman (1990), López Ixcoy (1997), Can Pixabaj (2015) and Can Pixabaj (2017). This paper is based on consultations with five speakers from the municipality of Santa Lucía Utatlán, Sololá, one of the towns in the West dialect region. Examples cited without a source, as well as those cited from Can Pixabaj (2015), represent the judgments of these speakers.

Like other Mayan languages, K'iche' is predicate–initial, though there are positions before the predicate for elements interpreted as topic or focus, and as well as for interrogatives. The order of arguments in transitive clauses is variable (Mondloch 1978; Larsen 1988; England 1991): some clauses only permit VOS order, others permit only VSO. Yet others show variable order, permitting both VSO and VOS. Below, we will be

discussing constructions in which the order is fixed. Central to the analysis developed here is the distinction between finite and nonfinite clauses. §2.1 and §2.2 sketch the morphosyntactic properties of the two clause types.

2.1 Finite clauses

Two morphological properties characterize finite verbs in K'iche' and distinguish them from nonfinite verbs. The first is the presence of morphological aspect, where the basic opposition is between incompletive and completive (= imperfective/perfective). Both are marked by a prefix, as shown in (4).

(4) a. x–at–ul–ik
         CP–B2SG–arrive–SS
         'you arrived'
    b. k–at–ul–ik
         ICP–B2SG–arrive–SS
         'you will arrive'

The second is the possibility of absolutive morphology. K'iche' is a head–marking language with ergative alignment. One set of markers, called *Set B* by Mayanists, indexes absolutives (the subjects of intransitive clauses and the objects of transitives), and another set *(Set A)* indexes ergatives (the subjects of transitive clauses), as well as genitives (the possessors of nouns). Thus, the marker which cross-references the intransitive subject in (4), *at-*, is identical to the one which cross-references the object in (5a), and different from the one which cross-references the transitive subject in (5b), *aw-*.

(5) a. x–<u>at</u>–u–kunaa–j
         CP–B2SG–A3SG–cure–ACT
         's/he cured you'
    b. x–<u>aw</u>–il–o
         CP–A2SG–see–SS
         'you saw him/her/it'

In K'iche', Set A and B markers occur between the aspect prefix and the verb, in the order [ASPECT–B–A–VERB]. It will be relevant below that Set B markers are restricted to finite clauses, while Set A markers have a wider distribution.

Table 1 shows the Set A and B markers in K'iche'. Each Set A marker has two allomorphs, one that occurs before consonant–initial stems and one that occurs before vowel–initial stems. There is

no overt exponent for Set B3SG and we do not indicate such a morpheme in our examples.[3]

	SET A (_C)	SET A (_V)	SET B
1sg	nu-/in-	(in)w-	in=
2sg	a-	aw-	at=
3sg	u-	r-	
1pl	qa-	q-	oj=
2pl	i-	iw-	ix=
3pl	ki-	k-	e=/e'=eb'=

Table 1: Set A and B markers in K'iche'

The Set B markers are shown here as proclitics, as this is their morphophonological status when they combine with a nonverbal predicate. When Set B markers combine with an aspect-bearing verb, they are prefixes rather than proclitics (see Bennett et al. 2018 for an analysis). The final position in finite verbs is filled (under certain conditions) by a set of morphemes called *status suffixes* which index the transitivity of stems, as well as the mood and dependent status of the predicate (Kaufman, 1990). The intransitive status suffix is *-ik*, as in (4). The status suffixes for transitive verbs distinguish ROOT from DERIVED transitives (the former are usually CVC, the latter are usually more complex): root transitives take the status suffix *-o* (5b), while derived transitives carry no status suffix (5a). However, derived transitives carry an active voice marker, *-j*, which alternates with passive and antipassive morphemes. This suffix has sometimes been analyzed as a status suffix for derived transitives.

The status suffixes are subject to a pervasive allomorphy in K'iche' which is determined by whether the morpheme is pronounced utterance-internally or immediately before a major boundary. For example, the intransitive status suffix *-ik*, which is obligatory in (6a) because the verb occurs in isolation, is suppressed in (6b), where it would occur phrase-internally.

(6) a. X–at–ul–*(<u>ik</u>).
CP–B2SG–arrive–SS
'You arrived.'

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[3] In addition to the Set A and B markers, there is a set of clitics which index person and number of 2nd person formal (Mondloch 1981).

b. X–at–ul(–*<u>ik</u>)   pa   k'ayb'al.
   CP–B2SG–arrive–SS PREP market
   'You arrived at the market.'

Likewise, the status suffix for root transitives, *-o*, is pronounced only phrase–finally.

(7) a. X–aw–il–<u>o</u>.
    CP–A2SG–see–SS
    'You saw him/her/it.'
  b. X–aw–il   le   ixoq.
    CP–A2SG–see DET woman
    'You saw the woman.'   (Can Pixabaj 2015:226)

Henderson (2012) argues that this alternation is conditioned prosodically, with the pronounced allomorph *(-ik, -o)* selected when the morpheme occurs at the right edge of an intonational phrase, the unpronounced one (Ø) occurring elsewhere. We adopt this view here and refer to the general phenomenon as *phrase–final allomorphy*.

Various elements participate in phrase-final allomorphy, including the theme vowel of derived transitive verbs, the status suffixes, and several other frequently occurring particles and suffixes. Some common alternating morphemes are listed in Table 2.

PHRASE-INTERNAL	PHRASE-FINAL	GLOSS
Ø	*-ik*	intransitive status suffix
Ø	*-o(h)*	root transitive status suffix
ta	*taj*	irrealis particle
chi	*chik*	'again'
k'u	*k'ut*	particle
–V–	-VV-	theme vowel of derived transitives
kan	*kanoq*	directional

Table 2: Some alternating morphemes in K'iche'

The morphophonology of phrase-final allomorphy involves processes which target the final syllable, including truncation of the final consonant, shortening of the final vowel, and full deletion of the final syllable. In all cases, the heavier allomorph (the one with more moras) occurs phrase-finally, while the lighter one occurs phrase-internally.

The template in (8) summarizes the inflectional morphemes that occur on finite verbs, and the order in which they occur. The voice suffixes include active, passive, antipassive, and agent focus; where relevant, these are discussed in later sections.[4]

(8) ASPECT – SET B – SET A – VERB – VOICE – STATUS SUFFIX

Syntactically, we assume finite verbal clauses are anchored by projections of three heads: v, T and C, as represented in Figure 1:

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        CP                        ⎫
       /  ⸜                       ⎬ DISCOURSE RELATIONS
      C    TP                     ⎭
           / \                    ⎫
          T   vP                  ⎬ FINITE INFLECTION
              / \                 ⎭
             v   VP               ⎫
                                  ⎬ PARTICIPANT RELATIONS
                                  ⎭
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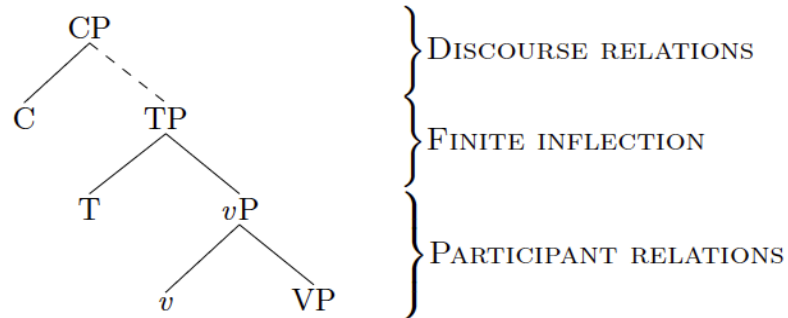
[Figure 1]

vP defines the domain within which event–related participants are introduced. In transitive clauses, we assume that the external argument (the more agentive argument) occupies a right–hand specifier of vP, and the internal argument (the patient or theme) originates as sister of V, as in Figure 2.

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              TP
             /  \
            T    vP
                /  \
              v'    EXT ARG
             /  \
        vTRANS   VP
                /  \
               V   INT ARG
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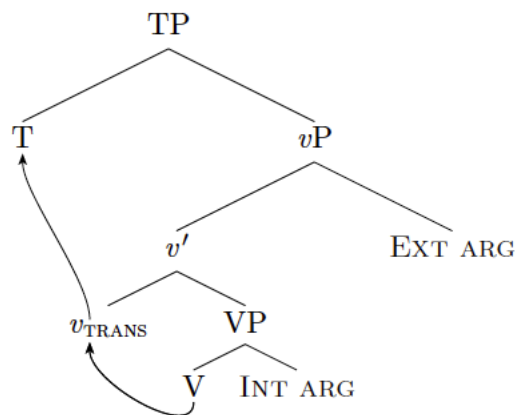
[4] Omitted here is a "motion" morpheme which may occur between Sets A and B. This morpheme indicates the path of the agent (in both active and passive forms).

[Figure 2]

*v*P is the domain associated with voice, productive voice alternations being associated with different values for *v*. These include v_{TRANS} and $v_{PASSIVE}$. T provides the structural locus for aspect and is present in finite clauses, but not, we will argue, in nonfinite ones. Following Coon et al. (2014), we assume that that V raises to *v* and *v* then to T. This yields VOS as the basic order in K'iche' (for other accounts of VOS in Mayan, see Clemens and Coon 2018).[5]

The heads *v* and T are also crucially involved in the syntactic licensing of nominal arguments. We follow Coon et al. (2014) in assuming that T, in addition to providing a position for aspect, licenses absolutives, and that *v* in transitive clauses licenses ergatives. These relations are expressed morphologically through the Set A and B markers – Set A for ergatives and Set B for absolutives.

While the basic positions for verbal arguments are post-verbal and within *v*P, there are several discourse-related processes which can bring arguments (as well as adjuncts) to preverbal positions. These include processes that apply to topics, foci, and interrogatives (on these relations in K'iche', see Yasavul 2011, 2017; Can Pixabaj and England 2011; and Velleman 2014). Roughly following Aissen (1992), we assume that these phrases occupy specifier positions of functional projections above TP. The precise details are not crucial to what follows, but for concreteness, we assume that wh interrogatives and topics occur in specifier of CP, while fronted foci occur in the specifier of a functional projection located between TP and CP.

Various particles and affixes associated with functional categories occur at or near the left edge of finite clauses. We assume that these occupy head positions within the functional projections above *v*P, with the aspectual prefixes functioning as head of TP, the complementizer *chi* and the polar question marker *la*, as head of CP, and the negative particles *na~ma~man* as head of a NEGP higher than TP. (9) illustrates the polar question particle, which precedes the verb:

(9) <u>La</u>   x–at–wa'   k'ut?
    Q   CP–B2SG–eat_{INTR}   PAR
    'Did you eat?'   (Can Pixabaj 2017:491)

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[5] We take no position here on whether the internal argument raises to a position above the external argument, as has been argued for various languages which show effects of syntactic ergativity. See Campana (1992) and Coon et al. (2014) for such accounts in Mayan and Polinsky (2017) for an overview.

la is paired with the particle *k'ut*, which follows the verb. In Santa Lucía K'iche', one or both may delete, leaving the other, and/or intonation, to indicate a question (Can Pixabaj, 2017:491). Negation similarly involves two particles, *na* and *ta(j),* which also surround the verb. In most dialects, the negative particle may delete, leaving just *ta(j)* to signal negation (Larsen, 1988; Yasavul, 2011; Romero, 2012).

(10) <u>Na</u>   x–ki–kamsa–j   <u>taj</u> ...
        NEG CP–A3PL–kill–ACT PAR
        'They did not kill it... '   (Can Pixabaj 2017:490)

The structural space between T and CP thus provides positions both for phrases bearing discourse relations like topic and focus and for morphemes which express a variety of functional categories. This space is available only in finite clauses, not in nonfinite ones, as shown directly below in §2.2.

2.2 Nonfinite clauses
Nonfinite clauses in K'iche' lack TAM marking. The nonfinite complement in (11) consists solely of the intransitive verb stem (*wa'* 'eat') plus the nominalizing suffix, *-iim*.

(11) X–u–tanab'aa'   [<u>wa'</u>–<u>iim</u>].
        CP–A3SG–suspend eat–NMLZ
        'S/he stopped eating.'   (Can Pixabaj 2015:194)

The external syntax of nonfinite clauses is like that of nominals, as they occur only in positions where lexical noun phrases are possible, including as subjects of intransitive predicates and objects of transitives, as in (11). If all core argument positions are filled, nonfinite clauses are oblique, as in (12), where the nonfinite complement is flagged by the preposition *pa*.

(12) X–in–ok   [<u>pa</u> wa'–iim].
        CP–B1SG–start PREP eat–NMLZ
        'I started eating.'   (Can Pixabaj 2015:194)

The form of the nominalization depends on properties of the verb it is derived from. Nominalizations derived from basic intransitive verb stems are suffixed with *-VVm*, as in (11) and (12). Derived intransitives (passives and antipassives) carry the voice morphology of antipassives and passives, plus a nominalizing suffix *-ik:*

(13) a. Ka–qa–maji–j   [kuna–n–ik]   chwe'q.
       ICP–A1PL–begin–ACT cure–ANTIP–NMLZ tomorrow
       'We will begin to cure tomorrow.'   (Larsen 1988:397)
   b. X–w–aj   [kuna–x–ik].
       CP–A1SG–agree cure–PSV–NMLZ
       'I agreed to be cured.'   (Can Pixabaj 2015:108)

Note that unlike the homonymous intransitive status suffix, the nominalizing suffix *-ik* does not alternate: it is always pronounced, whether it occurs phrase-medially (13a), or phrase-finally (13b) (compare with 6). Regardless of the source of the nominalization, the subject of the clause from which it is derived (i.e., the syntactically most prominent argument) cannot be pronounced. For nominalizations based on antipassives, this is the external argument (the agent, as in 13a); for those based on passives, it is the internal argument (the patient, as in 13b).

Following earlier work on Mayan nominalizations (Henderson 2012, Coon 2013, Imanishi 2014, 2020, Coon and Carolan 2017), we assume that productive nominalizations have the general structure shown in Figure 3 where the nominalizing head *n* takes a *v*P complement and is associated with nominalizing morphology. The verb stem (V) raises to *v* and that V–*v* complex then raises to *n*.

[Figure 3]

The nominalized constituent must be *at least as large* as *v*P, given our assumption that differences in voice are associated with different values of *v* and the fact that there are passive and antipassive nominalizations (13). This implies that nominalizations include a subject position. We assume that in (12)-(13), it is occupied by PRO, an unpronounced pronoun which, lacking inherent person and number features, is controlled by (i.e., referentially dependent on) a matrix argument. On the other hand, there is also evidence that the nominalized constituent is *no larger* than *v*P. The assumption that the clause does not extend to TP accounts for the absence of aspect marking and, as we will see below,

Set B marking, elements we have associated with T. It also accounts for the fact that elements associated with clausal functional structure above *v*P are not possible in nominalizations, a point made in Henderson (2012) for K'iche' and in Imanishi (2014, 2020) for Kaqchikel. Such elements include negation, topics, fronted foci, and interrogatives, all of which occupy positions higher than *v*P. Can Pixabaj (2015) shows that nominalized clauses cannot contain negation (14a,b).

(14) a. *K'ax [na wa'=iim taj].
     hard   NEG eat–NMLZ IRR
     Intended reading: 'It is hard not to eat.'
  b. *X–w–aj   [na   kuna–x–ik   taj].
     CP–A1SG–agree NEG   cure–PSV–NMLZ IRR
     Intended reading: 'I agreed not to be cured.'   (Can Pixabaj 2015:111–2)

Nor are topics, foci, or interrogatives possible in nominalizations. Thus, while a locative phrase is possible at the right edge of a nominalized clause (15a), that phrase cannot be fronted to the left edge of the nominalization (on interrogatives, see §3.1).

(15) a. X–u–taqchi'–j   pa   [war–aam   p–uleew].
     CP–A3SG–force–ACT PREP sleep–NMLZ   PREP–floor
     'S/he forced him/her to sleep on the floor.'   (Can Pixabaj 2015:105–6)
  b. *X–u–taqchi'–j   pa   [p–uleew war–aam   (wi)].
     CP–A3SG–force–ACT PREP PREP–floor sleep–NMLZ RES
     Intended reading: 'S/he forced him/her to sleep on the floor.'

     Although intransitive clauses can be nominalized in K'iche', transitive ones cannot be. This is a property that K'iche' shares with a number of other Mayan languages (Polian 2013, Coon et al. 2014, Aissen 2017:274ff). The languages fill this gap in various ways. In K'iche', it is filled by a passive nominalization (Mondloch 1981, Larsen 1988), illustrated by the bracketed portions of (16a,b).

(16) a. X–inw–eta'ma–j   [u–ch'aaj–ik   le   uq].
     CP–A1SG–learn–ACT   A3SG–wash:PSV–NMLZ DET skirt
     'I learned to wash the skirt.'
  b. X–r–eta'ma–j [ki–kuna–x–iik].
     CP–A3SG–learn A3PL–cure–PSV–NMLZ
     'S/he learned to cure them.'

There are three features of the nominalized verbs in (16a) and (16b) that call for comment: the nominalizing suffix *(-ik, -iik)*; the form of the verb stem *(ch'aaj, kuna-x)*; and the Set A inflection *(u-, ki-)*. We discuss these in turn.

The nominalizing suffix is an alternating morpheme, *-ik ~ -iik*: the light allomorph occurs phrase-internally (16a), the heavy allomorph phrase-finally (16b). The allomorphy of this suffix is thus different from that of both the intransitive status suffix and the nominalizer for intransitive stems, as summarized in Table 3. We will refer to nominalizations like those in (16) as *-iik nominalizations*.

PHRASE-INTERNAL	PHRASE-FINAL	GLOSS
Ø	*-ik*	intransitive status suffix
-ik	*-ik*	intransitive nominalizer
-ik	*-iik*	*-iik* nominalizer

Table 3: Alternating forms

While the complements in (16) translate as active infinitival clauses in English, the nominalized verb in K'iche' is passive. This is clear from the allomorphy of the verb stem, which is conditioned by whether the nominalized verb is a root transitive or a derived transitive. Nominalization of a root transitive like *ch'aj* 'wash' (16a) is formed by lengthening the root vowel *(ch'aaj)*, while nominalization of a derived transitive like *kuna-* 'cure' (16b) is formed with the suffix *–x (kuna-x)*. The same allomorphy defines the passive morpheme: the passive of root transitives is formed by lengthening the root vowel (17a) and the passive of derived transitives by the voice suffix *–x* (17b).

(17) a. x–ch'<u>aa</u>j–ik
      CP–wash:PSV–SS
      'it was washed'
   b. x–e–kuna–<u>x</u>–ik
      CP–B3PL–cure–PSV–SS
      'they were cured'

We assume then that the complements in both (16a) and (16b) are nominalized passive clauses and, like the corresponding transitive clauses, contain two arguments, agent and patient.

As in other nominalizations, one argument in an *-iik* nominalization must be unexpressed, with its interpretation determined usually through Control. Although in passive nominalizations like (13b), it is the patient which is controlled, in *-iik*

nominalizations, it is the agent. This is evident both from the translations of (16) and from the fact that the agent cannot be expressed. The patient, on the other hand, *is* expressed, and is indexed on the nominalization by Set A markers. Thus *u-* (A3SG) in (16a) indexes *le uq* 'the skirt', while *ki-* (A3PL) in (16b) indexes an unpronounced 3rd person plural pronoun.

In her study of the typology of Control, Stiebels (2007) proposes that the controllee may correspond to one of two roles: either to the most prominent syntactic role (subject) or, a more marked typological option, to the most prominent semantic role (agent). K'iche' uses the marked option in *-iik* nominalizations. This can be attributed to the non-existence of transitive nominalizations in the language, together with the fact that this gap is filled by passive forms. If a passive form is forced in a context where the agent is controlled, then the controllee will correspond to the passive agent. In this case, therefore, the controllee is determined by virtue of its semantic role, not its syntactic role. An analysis along these lines is implemented for Kaqchikel in Imanishi (2014, 2020) and here we will follow his approach.[6] Imanishi assumes that in the passive, the external argument is suppressed syntactically but remains part of the semantic representation. The control relation which involves the agent as controllee therefore does not involve PRO, but targets a thematic role which is identifiable in the semantic representation, rather than any syntactic position or role.

We also adopt Imanishi's account of Set A marking of the internal argument in *-iik* nominalizations (2014, 2020). The use of Set A in this context may seem surprising since internal arguments – whether transitive objects or passive subjects– are indexed elsewhere by Set B, not Set A. Imanishi assumes, as we do, that the internal argument in an *-iik* nominalization occupies a position within *v*P, where it must be syntactically licensed (we leave open whether it is promoted, as in "promotional" passive, or remains within VP, as in "non-promotional" passive). In finite clauses, the internal argument is licensed by T (§2.1). Since T is unavailable in nominalizations, however, Imanishi proposes the internal argument is licensed by the nominalizing head, *n.* Set A then reflects the licensing relation between *n* and the internal argument. Imanishi's key assumption is that Set A is not restricted to indexing arguments in fixed structural positions (e.g., specifier of *v* (ergative) or specifier of *n* (genitive)), but can, in principle, license any nominal, as needed, within a fixed structural domain. In this account, syntactic licensing of the internal argument in both finite clauses and nonfinite ones

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[6] The passive analysis of *–iik* nominalizations is not problem-free (Can Pixabaj 2015:114ff). We will not try to resolve these issues here, as they are not crucial to our basic analysis of manner interrogatives.
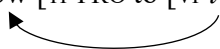
involves the head which selects *v*P. In, finite clauses (Figure 2), this is T; in nonfinite ones, it is *n* (Figure 3).[7]

3   An analysis for manner interrogatives

With this as background, we turn to the main topic of this paper, the analysis of manner interrogatives like the complement in (18).

(18)   X–r–eta'maa–j   [jas u–tzakab'a–x–ik   le   sub'].
        CP–A3SG–learn–ACT WH   A3SG–cook–PSV–NMLZ DET tamalito
        'She learned how to cook the tamalitos.'

The complement clearly contains an *-iik* nominalization: the nominalized verb, *u-tzakab'a-x-ik* 'to cook', bears no aspect, it is derived by the passive suffix *x–* plus the nominalizer *-i(i)k*, and its Set A prefix agrees with the internal argument. Although (18) appears to involve wh-Movement within the complement of an element meaning 'how', as in the corresponding English example, repeated below from (3), we start by giving two reasons why such an analysis is untenable for K'iche'.

(3) [she learned [CP how [TP PRO to [VP *t* [VP cook the tamalitos]]]]]

3.1   Two problems

The first problem is that *jas* does not, in general, translate as 'how'. In particular, in finite clauses, it means *what*, not *how*. Thus, while *jas* seems to translate as 'how' in the complement of (20a), where it is associated with a nominalized verb (underlined), it only translates as 'what' in the finite complement of (20b).

(20) a.   X–r–eta'maa–j   [jas   u–b'i–x–iik]
          CP–A3SG–know–ACT WH   A3SG–say–PSV–NMLZ
          'She learned how to say it.'
    b.   X–r–eta'maa–j   [jas k-u–b'ii–j].
          CP–A3SG–know–ACT   WH ICP–A3SG-say–ACT
          'She learned what to say/what she should say.'

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[7] An alternative account is that the internal argument functions syntactically as possessor of the nominalization and is marked by Set A *qua* genitive (Mondloch 1981:133-4, Larsen 1988:399). The idea that Set A markers in Mayan nominalizations index grammatical possessors has a long history. See Robertson (1976) and Larsen and Norman (1979) for early treatments and Coon (2013) and Coon and Carolan (2017) for more recent discussion.

It is possible that *jas* is ambiguous, with its interpretation determined by whether the clause it occurs in is finite or nonfinite. However, since the interpretation of interrogatives is not generally dependent on finiteness, it would be preferable to assume a constant interpretation for *jas* and attribute the manner semantics of (20a) to something else. This is the strategy we pursue below.

The second problem with analyzing (18) along the lines of (19) is that it would involve wh-Movement within a nonfinite (nominalized) clause, analogous to wh-Movement within the infinitival clause in English. We saw in §2.2 that fronting of focus is impossible in K'iche' nominalizations. The same is true of interrogatives.

(21) a. W–eta'aa–m   [jachin   k–u–q'atuu–j].
       A1SG–know–PRF   who   ICP–A3SG–visit–ACT
       'I know who s/he visits.'

    b. *X–u–b'i(i)–j   [jachin   u–q'atu–x–iik].
       CP–A3SG–say–ACT   who   A3SG–visit–PSV–NMLZ
       Intended reading: 'S/he said who to visit.'

Example (21a) shows wh-Movement of the object (*jachin* 'who') within a finite complement (note the finite verb *kuq'atuuj*), while (21b) shows that the same expression cannot undergo wh-Movement within a nonfinite complement (note the nominalized verb, *uq'atuxiik*). The pair in (22) makes the same point, this time with wh-Movement of a temporal expression, *jampaa'* 'when'. Wh-Movement is possible in a finite complement (22a), but not in a non-finite one (22b).

(22) a. X–r–eta'maa–j [jampaa'   ka–q'ool   le   kotz'i'j].
       CP–A3–learn   when   ICP–cut:PSV   DET   flower
       'She learned when the flowers should be cut.'

   b. *X–r–eta'ma(a)–j [jampaa' u–q'ool–ik   le   kotz'i'j].
       CP–A3SG–learn   when   A3–cut:PSV–NMLZ   DET   flower
       Intended reading: 'She learned when to cut the flowers.'

The impossibility of wh-Movement within the nominalization follows from the structure in Figure 3: a nonfinite nominalized complement in K'iche' is too "small" to contain the structural position targeted by wh-Movement (Specifier, CP). Since the position of *jas* in examples like (18) cannot be the result of wh-Movement within the nominalization, the structure of the complement in (18) must be in some way different from that of its English translation.

3.2 Nonverbal predication

Since the manner interpretation does not come from the wh element *jas* 'what', it must come from elsewhere. The likely candidate is the nominalization itself. Nominalized clauses in K'iche' can denote events, as they do when they function as subject (23a) or object (23b) of phasal predicates:

(23) a. Keb' q'iij [u–keem–ik   le   paas].
         two   day   A3SG–weave:PSV–NMLZ DET belt
         'It took two days to weave the belt.'
   b. X–u–maj   [u–keem–ik   le   paas] le ixoq.
         CP–A3SG–begin A3SG–weave:PSV–NMLZ DET belt   DET woman
         'The woman began to weave the belt.'   (Can Pixabaj 2015:19)

However, other predicates pick out that aspect of the denoted event which has to do with manner, leading the nominalization to be interpreted roughly as 'way of doing X'. This is the meaning it has in examples (24)-(25), where it combines with the predicates *je la'* 'thus' and *aninaq* 'quick'. (24) would be appropriate if uttered to a child, for example, with a pointing gesture toward a woman weaving a belt.

(24) Je la' [u–keem–ik   le   paas].
      thus   A3SG–weave:PSV–NMLZ DET belt
      'That's the way to weave the belt.'
      (Lit. 'The weaving of the belt is thus.')

Example (25), where the verb *tzakab'a* refers to the packing of a pot in order to cook tamalitos, is appropriate if the packing was done with quick, abrupt motions.

(25) Aninaq [u–tzakab'a–x–ik   le   sub'].
      quick   A3SG–cook–PSV–NMLZ DET   tamalito
      'The tamalitos are/were cooked quickly.'
      (Lit. 'The cooking of the tamalitos is/was quick.')

In contrast to some other languages (e.g., Chichewa, Mchombo 2004:116), there is no dedicated morphology in K'iche' for deriving manner nominalizations. Nor do we assume that K'iche' nominalizations involve covert morphology which syntactically disambiguates the event reading from the manner reading, as is sometimes proposed (e.g. by Ntelitheos 2012 for Malagasy). Rather, we assume that there is a semantic indeterminacy in K'iche' nominalizations which allows reference to an event or to the

manner of an event, with the interpretation in any particular context depending on the predicate (Vendler 1957, Melloni 2011:120; see also fn. 15). Other predicates which induce or coerce the manner reading for their nominalized subjects in K'iche' include *no'jim* 'slow' and *utz* 'good, well'.

Examples (24)-(25) have nonverbal predicates which take the nominalization as subject. They therefore have the same general structure as more canonical nonverbal clauses in K'iche' which have simple nominals as subject.

(26) a. Sib'alaj utz [ri nu–taat].
      very   good DET A1SG–father
      'My father is very good.'   (López Ixcoy 1997:304)
   b. In=morto'm   na.
      B1SG=mayordomo PAR
      'I am still mayordomo.'[8]

Note that clauses with nonverbal predicates lack an overt copula, whether the subject is a simple nominal (26) or a nominalized clause (24)-(25). Despite this, clauses with nonverbal predicates are finite, a point we expand on below.

The construction illustrated in (24)-(25) suggests an analysis for (2a), repeated below:

(27)   [Jas]PRED [u–tzakab'a–x–ik   le   sub']SUBJ?
       what   A3SG–cook–PSV–NMLZ DET tamalito
       'How are the tamalitos cooked?'

As indicated by the subscripts, *jas* 'what' is the predicate in (27) and the nominalized phrase is its subject. A more literal translation of (27) then would be roughly, 'what is the way of cooking the tamalitos?' Syntactically, (27) has the same structure as (28); the only difference is that the subject in (28) refers to an ordinary individual, while the one in (27) refers to the manner of an event.

(28)   [Jas] PRED [u–b'i'   ri   aw–achalaal]SUBJ?
       what   A3SG–name DET A2SG–sibling
       'What is your sister's/brother's name?'

Being an interrogative clause, (27) can function as the complement to a higher predicate

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[8] In Guatemala, *mayordomo* is a position within the *cofradía*, an organization of Roman Catholic laymen with responsibilities that include the maintenance of the saints' images.

which selects an interrogative complement. This yields (29) (=2b).

(29)　　X–r–eta'maa–j　　　[[jas]PRED [u–tzakab'a–x–ik　　　le　sub']SUBJ].
　　　　CP–A3SG–learn–ACT　what　　A3SG–cook–PSV–NMLZ　DET　tamalito
　　　　'She learned how to cook the tamalitos.'
　　　　(Lit. 'She learned what the way of cooking the tamalitos is.')

The structure shown in (29) for the complement is different from that of its English translation in the two ways we have seen are necessary. *jas* does not mean 'how', but retains its interpretation as 'what'. Further, the wh pronoun *jas* does not reach its surface position via wh-Movement within the nonfinite complement, a derivation we have seen is impossible in K'iche'. Rather, as predicate of a clause which takes the nominalization as subject, it is entirely outside that nominalization.

3.3 Finiteness
There is a third difference between the K'iche' complement in (29) and its English translation, a difference in finiteness. Clearly, the English construction ('how to cook the tamalitos') is nonfinite. However, the K'iche' complement (*jas utzakab'axik le sub'* 'what is the way of cooking the tamalitos') is finite, despite the absence of any finite verb. We will provide language-particular evidence for this shortly.

　　The finiteness of the complement follows from our proposal that such clauses contain a nonverbal predicate (*jas* 'what'), for all K'iche' clauses with nonverbal predicates are finite. Nonverbal clauses do not morphologically mark completive or incompletive aspect (these being morphological categories of the verb), but they have both the internal structure and the external distribution of finite clauses. Internally, for example, the 1st person subject of (26b) is indexed by Set B markers, a possibility which exists only in finite clauses and which we associate with the presence of (finite) T. As far as external distribution is concerned, clauses with nonverbal predicates occur in positions that are restricted to finite clauses. For example, (26b) can function as complement to a higher predicate like *aaj-* 'want', which selects only finite complements (on the selectional properties of *aaj-,* see Can Pixabaj 2015; on this form of argument, see Mateo Toledo 2011):

(30)　　Ka–w–aaj　　　[in=morto'm　　　na　pa　keb'　junaab']TP.
　　　　ICP–A1SG–want　B1SG=mayordomo　still　in　two　year
　　　　'I want to still be mayordomo in two years.'

Our analysis of manner interrogatives as clauses with nonverbal predicates predicts,

then, that they will pattern with finite complements, not nonfinite ones. In the following two sections, we draw on two phenomena in K'iche to show that this prediction is correct.

3.3.1   Phrase–final allomorphy

Recall that various morphemes have alternate forms, depending on their position in the intonational phrase, §2.1: the heavy allomorph occurs at the right edge of an intonational phrase and the light one elsewhere. It has been observed that when an alternating morpheme is immediately followed by a complement clause, the choice of allomorph varies according to the finiteness of the complement (Larsen 1988, 389ff.; Henderson 2012; Can Pixabaj 2015). The basic generalization is that the heavy allomorph occurs before a finite complement clause, and the light allomorph before a nonfinite one. (31)-(32) illustrate this with the irrealis particle *ta(j)*. (31) shows that the heavy form *(taj)* occurs before a finite complement (note the finite verb *kaach'aj).*

(31)   Na   x–u–b'ij   taj/*ta [chi   k–aa–ch'aj   le   qastaq].
       NEG CP–A3SG–say IRR   COMP ICP–A2SG–wash DET clothes
       'S/he didn't say for you to wash the clothes.' (=. . . that you wash the clothes)

In contrast, the light form *(ta)* occurs before a nonfinite complement (note the nominalized verb *uch'aajik).*

(32)   Na   x–u–'–b'ij   ta/*taj [u–ch'aaj–ik   le   qastaq].
       NEG CP–A3SG–MVT–say IRR   A3SG–wash:PSV–NMLZ DET clothes
       'S/he didn't go to say to wash the clothes.'

Since phrase-final allomorphy is determined by the presence of intonational phrase boundaries, we assume that there is an intonational phrase break immediately before a finite complement in K'iche', but not before a non-finite complement.

    It should be possible therefore to determine the finiteness of interrogative manner complements by placing them in a position where they are immediately preceded by an alternating morpheme. When we do this, as in (33), the results are clear: although interrogative manner complements contain no finite verb, they pattern with finite complements in conditioning the heavy form of the morpheme (Can Pixabaj, 2015:171). In (33), the alternating morpheme is again the irrealis particle.

(33)　Na　x–u–'–b'ij　　　　taj/*ta [jas　u–ch'aaj–ik　　　　le　qastaq].
　　　　NEG　CP–A3SG–MVT–say　IRR　　what　A3SG–wash:PSV–NMLZ　DET　clothes
　　　　'S/he didn't go to say how to wash the clothes.'

(32) and (33) are surface-identical except that the complement in (33) is introduced by the wh word *(jas)*, while (32) is not. This difference is crucial though – the presence of *jas* in (33) shifts the complement to the finite, copula construction described above; its absence leaves the complement a nonfinite nominalization. The minimal pair in (34)-(35) shows the same contrast. Again, the complement in (35) is introduced by *jas*, while the one in (34) is not.

(34)　X–r–eta'm<u>a</u>–j　　　[u–keem–ik　　　　　le　　paas].
　　　　CP–A3SG–learn–ACT　A3SG–weave:PSV –NMLZ　DET　belt
　　　　'She learned to weave the belt.'
(35)　X–r–eta'm<u>aa</u>–j　　　[jas　u–keem–ik　　　　　le　　paas].
　　　　CP–A3SG–learn–ACT　what　A3SG–weave:PSV –NMLZ　DET　belt
　　　　'She learned how to weave the belt.'
　　　　(Lit. 'She learned what the way of weaving the belt is.')

Here, the alternation targets vowel length in the final syllable of the matrix verb. The short-vowel allomorph occurs in (34), where the complement is nonfinite (note the nonfinite form *ukeemik)*, while the long-vowel allomorph occurs before the manner interrogative complement (35). We believe that the right conclusion here is that the complements in (33) and (35) are finite, despite the absence of any finite verb, and we suggest further that this follows from our proposal that such clauses involve nonverbal predication. As noted above, clauses with nonverbal predicates are finite in K'iche', and manner interrogatives (as well as non–interrogatives like (24)-(25)) are no exception.

At this point, the reader might object that the facts in (33) and (35) do not show that manner interrogative complements are finite, but only that they are CP's. Indeed, Henderson (2012) argues that the left edge of an intonational phrase is associated with the left edge of CP and his analysis makes no reference to finiteness. However, Henderson (2012) does not take into account a second type of finite complement, one which is analyzed in Can Pixabaj (2015) as rooted in TP.

TP complements are not introduced by a complementizer and they show both referential and aspectual dependencies on the matrix clause. An example is the complement selected by the desiderative *rayii*- 'wish, crave' (36).

(36) K–in–rayii–j   [k–in–qumu–j   ju–qub'   nu–joroon].
      ICP–A1SG–wish–ACT   ICP–A1SG–drink–ACT   one–MSR   A1SG–water
      'I wish to drink a bit of water.'   (Can Pixabaj 2015:101)

rayii- requires that the subject of its complement be coreferential with its own subject (i.e., it induces *inherent control*, in the sense of Stiebels 2007, *finite control* in the sense of Landau 2004). Disjoint reference results in ungrammaticality (37).

(37) *K–in–rayii–j   [k–a–qumu–j   ju–qub'   a–joroon].
      ICP–A1SG–wish–ACT   ICP–A2SG–drink–ACT   one–MSR   A2SG–water
      Intended reading: 'I wish you would drink a bit of water.'

                                                           (Can Pixabaj 2015:102)

Further, the aspect marked on the complement must "match" that of the matrix. Although always interpreted as irrealis, it must be incompletive if the matrix verb is incompletive (38a), and completive if the matrix verb is completive (38b).

(38) a. K̲–in–rayii–j   [k̲–in–qumu–j   ju–qub'   nu–joroon].
         ICP–A1SG–wish–ACT   ICP–A1SG–drink–ACT   one–MSR   A1SG–water
         'I wish to drink a bit of water.'
     b. X̲–in–rayii–j   [x̲–in–qumu–j   ju–qub'   nu–joroon].
         CP–A1SG–wish–ACT   CP–A1SG–drink–ACT   one–MSR   A1SG–water
         'I wished to drink a bit of water.'

A mismatch in aspect results in ungrammaticality (39).

(39) a. *K̲–in–rayii–j   [x̲–in–qumu–j   ju–qub'   nu–joroon].
         ICP–A1SG–wish–ACT CP–A1SG–drink–ACT   one–MSR   A1SG–water
         Intended reading: 'I wish to drink a bit of water.'
     b. *X̲–in–rayii–j   [k̲–in–qumu–j   ju–qub'   nu–joroon].
         CP–A1SG–wish–ACT   ICP–A1SG–drink–ACT   one–MSR   A1SG–water
         Intended reading: 'I wished to drink a bit of water.'

The absence of the complementizer and the presence of referential and aspectual dependencies suggest that the complement to *rayiij* projects only as far as TP. This is supported by the fact that such complements do not permit internal negation:

(40) *K–in–rayii–j   [na k–in–qumu–j   ta ju–qub' nu–joroon].
      ICP–A1SG–wish–ACT NEG ICP–A1SG–drink–ACT IRR one–MSR A1SG–water
      Intended reading: 'I wish to not drink a bit of water.' (Can Pixabaj 2015:101)

Nor do they permit a preverbal topic or focus in the complement. (41) shows the impossibility of focus:

(41) *X–in–rayii–j   [jun   alanxaax x–in–tij–o].
      CP–A1SG–wish–ACT one   orange   CP–A1SG–eat–SS
      Intended reading: 'I wished to eat an orange.'

The desiderative *aaj-* 'want' shows the same behavior when its subject controls the subject of its complement (Can Pixabaj 2015).[9]
    It is significant then that TP complements, like CP complements, also require the heavy allomorph of a preceding alternating morpheme (Can Pixabaj 2015:147-8; see also Larsen 1988:389ff.). In (42)-(43), the matrix verb itself is an alternating morpheme *(aj~aaj)*. It is realized by its heavy allomorph when it occurs immediately before a TP complement, as in (42).

(42) Ka–r–aaj   [k–u–tij   ak'].
      ICP–A3SG–want ICP–A3SG–eat chicken
      'S/he wants to eat chicken.'   (Can Pixabaj 2015:158)

In contrast, it is realized by its light allomorph when it is separated from its complement by another morpheme, as in (43) (that morpheme, the irrealis particle, is also alternating *(ta~taj)* and occurs before TP in its heavy form, as expected).[10]

(43) Na k–aw–aj   taj   [k–a–b'ii–j].
      NEG ICP–A2SG–want IRR   ICP–A2SG–say–ACT
      'You don't want to tell it.'   (Can Pixabaj 2015:91)

We conclude then that it is a property of finite complements, not CP complements per se,

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[9] Can Pixabaj (2015) gives a further argument for distinguishing TP from CP complements based on successive cyclic effects. The argument is further developed in Mendes and Ranero 2020.

[10] Other examples which illustrate the same generalization are (36) and (38). The matrix verb *rayii-j* 'desire' is an alternating morpheme: its heavy allomorph has a long vowel in the last syllable, while its light allomorph has a short vowel. See also (30).

that they induce an intonational phrase break at their left edge.[11] Interrogative manner clauses may well be CP's, but their behavior with respect to phrase–final allomorphy is determined by their finiteness, not by their category. Analogizing the K'iche' construction to its English translation (see 19) is thus completely mistaken: the construction is entirely different. Despite its appearance, it is finite, a property which follows directly from the fact that it involves nonverbal predication.

3.3.2 Word order

Word order also distinguishes finite from nonfinite complements in K'iche' and it too diagnoses interrogative manner clauses as finite. As noted earlier, the order of subject and object is variable when both are postverbal. When the object is a clausal complement, however, the order is fixed, but it is fixed differently for finite and nonfinite complements. A finite complement must follow the subject, yielding VSO order (Can Pixabaj, 2015:140). This is true for CP complements, as in (44):

(44) a. X–k–eta'ma–j   le   winaq [chi   x–u'l   le   ajtijaab'].
     CP–A3PL–know–ACT   DET people COMP CP–B3PL.come   DET   teachers
     'The people knew that the teachers arrived (here).'
   b. * X–k–eta'maa–j [chi x–u'l le ajtijaab'] le winaq.

It is also true of TP complements, (45):[12]

(45) a. Ka–k–aj   le   ak'alaab' [k–e–wa'–ik].
     ICP–A3PL–want   DET   children   ICP–B3PL–eat–SS
     'The children want to eat.'
   b. * Ka–k–a(a)j   [k–e–wa']   le   ak'alaab'.
     ICP–A3PL–want   ICP–B3PL–eat DET   children
     Intended reading: 'The children want to eat.'[13]

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[11] This conclusion calls for a revision of Henderson (2012), which crucially references CP. We will not try here to revise his analysis, but suggest that it might reference "projections of T". Since T occurs only in finite clauses in K'iche', this picks out TP and CP complements, and excludes nominalized ones.

[12] Larsen (1988:391) makes the same observation. However, according to López Ixcoy (1997:429), finite complements without complementizers may either precede or follow the subject. The first option is not possible for the Santa Lucía K'iche' speakers we have consulted. This may be a matter of dialect variation.

[13] If the last syllable of the matrix verb is lengthened *(ka-k-aaj)*, (45b) becomes grammatical, but with the interpretation 'S/he wants the children to eat'. The structure in this case is *[ka-k-aaj*

On the other hand, a nonfinite (nominalized) object complement must precede the subject, yielding VOS. This is true whether the nonfinite clause is intransitive (46) or semantically transitive (47):

(46) a. X–r–eta'ma–j   [b'in–eem]   le   ak'aal.
         CP–A3SG–learn–ACT walk–NMLZ DET   child
         'The child learned to walk.'   (Can Pixabaj 2015:141)
     b. *X–r–eta'ma–j le ak'aal [b'in–eem].
(47) a. X–ki–chap   [u–tiij–ik   wa] le   ak'al–aab'.
         CP–A3PL–start   A3SG–eat:PSV–NMLZ food DET   child–PL
         'The children started eating food.'   (Can Pixabaj 2015:141)
     b. *X–ki–chap le ak'al–aab' [u–tiij–ik wa].

Although manner interrogatives look nonfinite, they again behave like finite complements and obligatorily follow the subject, yielding VSO (Can Pixabaj 2015:140).[14]

(48) a. X–r–eta'ma–j   le   ali [jas u–keem–ik   le   paas].
         CP–A3SG–learn–ACT DET   girl what A3SG–weave:PSV–NMLZ DET belt
         'The girl learned how to weave the belt.'
     b. *X–r–eta'maa–j [jas u–keem–ik le paas] le ali.

The examples in (48) form a minimal pair with those in (49). The complements differ only in the presence (48) or absence (49) of *jas*. This superficially small difference, however, determines sharply different word order properties, as the complement in (49) must precede the matrix subject.

(49) a. X–r–eta'ma–j   [u–keem–ik   le paas]   le ali.
         CP–A3SG–learn–ACT A3SG–weave:PSV –NMLZ DET belt   DET girl
         'The girl learned to weave the belt.'
     b. *X–r–eta'ma–j le ali [u–keem–ik le paas].

[*k-e-wa' le ak'alaab']],* with *le ak'alaab* 'the children' subject of the complement, not of the matrix.

   [14] (48b) is possible with a pause after the nominalization. In that case, the subject is an afterthought.

Again, the near surface-identity of the complements in (48a) and (49a) masks a major structural difference: the complement in (48a) is a fully finite copula clause with a nonverbal predicate, *(jas)*, and the nominalization as subject. In (49a), the nominalization *is* the complement. The differences in word order follow from the finiteness/nonfiniteness of the complement.

3.4 A structural proposal

We propose the structure in Figure 4 then for nonverbal clauses with nominalized subjects (i.e., for 25, 27, and the complement in 29). We adopt the analysis of nonverbal clauses suggested in Matushansky (2019). In her endocentric analysis, the subject merges with the maximal projection of the predicate, and the result preserves the category of the predicate. $T_{[-DYN]}$ selects a nonverbal XP complement.
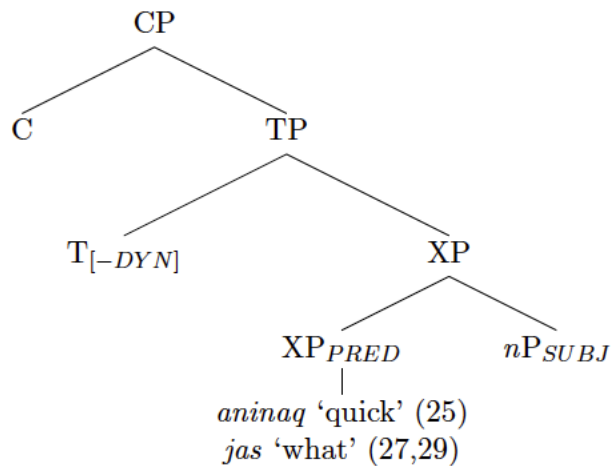
[Figure 4]

It is possible that the predicate *aninaq* or *jas* raises to T, and that *jas*, being interrogative, raises further to Specifier, C, but neither assumption is crucial to our analysis.

3.5 Why nonverbal predication?

The expression of manner via a nonverbal predicate which takes a nominalized clause as its subject is not surprising from a semantic perspective. The standard neo–Davidsonian analysis of manner adverbs takes them to be predicates of events (Parsons 1990); alternatively, they are taken to be predicates of manners of events (Dik 1975) (see Piñón 2008 for an overview). Such structures have been discussed elsewhere, for example, in St'át'imcets (Lillooet Salish) (Arregui and Matthewson 2001).

St'át'imcets (Arregui and Matthewson, 2001:3)

(50) a.　k'ink'ent　[ti　s–tqaIk'–em–s–a　　　　　s–Mary]
　　　　dangerous [DET NOM–drive–INTR–3SG.POSS–DET　NOM–Mary
　　　　'Mary drove dangerously.'
　　　　(Lit. 'Mary's driving was dangerous.')

　　b.　skenkin　[ti　n–s–xat'–em–a　　　　　ta　sqwem–a]
　　　　slow　　[DET　1SG.POSS–NOM–hard–INTR–DET　DET mountain–DET]
　　　　'I walked up the hill slowly.'
　　　　(Lit. 'My walking up the hill was slow.')

Arregui and Matthewson attribute the use of this structure to the fact that St'át'imcets lacks manner adverbs. The situation in K'iche' is analogous, though on a different scale. K'iche' does have some manner adverbs (i.e., manner–denoting expressions which can adjoin to a finite clause), for example, *aninaq* 'quick(ly)' and *no'jiim* 'slow(ly), careful(ly)' (*aninaq* and *no'jiim* can also function as predicates, as in (25)).

(51)　Aninaq　x–u–ch'aj　　le　laq.
　　　quick　　CP–A3SG–wash　DET dish
　　　'S/he washed the dishes quickly.'

(52)　No'jimaal　x–u–q'ol　　le　roxox.
　　　slow　　　CP–A3SG–cut　DET roses
　　　'S/he cut the roses carefully.'

However, K'iche' lacks a wh manner adverb and for that reason resorts to a structure in which the interrogative element is a predicate, not an adverb. In addition, various items in K'iche' that would be expressed by manner adverbs in other languages cannot substitute for the adverbs in (51)-(52).

(53)　*Je ri'/utz/jun wi　x–u–ch'aj　　le　laq.
　　　thus/good/different　CP–A3SG–wash　DET　dish
　　　Intended meaning: 'S/he washed the dishes that way/well/differently.'

In these cases too, the manner element can function as predicate to a nominalized clause (see (24) and (62) below for examples).

4　Extending the basic structure

The use of a nonverbal predicate + nominalized subject to express manner in K'iche'

has two inherent limitations, both illustrated by (54).

(54) a.   Jas   [u–tzakab'a–x–ik   le   sub']?
          what   A3SG–cook–PSV–NMLZ DET tamalito
          'How are the tamalitos cooked?'
     b.   Aninaq [u–tzakab'a–x–ik   le   sub'].
          quick   A3SG–cook–PSV–NMLZ DET tamalito
          'The tamalitos were cooked quickly.'

One is the absence of aspect marking: since the predicate is nonverbal (e.g., *jas, aninaq*) and its subject is a nonfinite nominalization, there is no place to mark verbal aspect. The aspect in such examples is interpreted either as generic or is contextually determined. The other limitation is the impossibility of expressing the external argument. Recall that on the passive analysis of *-iik* nominalizations adopted here (§2.2), the external (agent) argument is syntactically suppressed and can be interpreted as specific only through semantic control. There being no controller for the agent in (54), it is interpreted as generic or indefinite.

   In both respects, K'iche' contrasts with languages in which the size of the nominalized structure is larger and can syntactically realize the external argument and possibly TAM marking. In St'át'imcets, which also uses a nonverbal predicate + nominalized subject to express manner, the nominalized clause is fully finite.

St'át'imcets (Arregui and Matthewson, 2001:8).
(55) a. skenkín [ta   s–xát'–em–s–a   tuʔ s–Mary]
         slow   [DET   NOM–climb–INTR–3SG.POSS–DET PAST NOM–Mary]
         'Mary climbed slowly.'
     b. áma [t–s–waʔ   ník'–in–as   s–Mary   ta   ts'úqwaz'–a]
         good [DET–NOM–PROG   cut–TR–3ERG NOM–Mary DET   fish–DET]
         'Mary was cutting the fish well.'

It can include tense and aspect (e.g., *tuʔ* 'PAST' in 55a, *waʔ* 'PROG' in 55b) as well as a syntactically realized subject, which retains the nominative case (*s-* in 55) that it would have in a simple finite clause (see also 50).

   In the following sections, we discuss how K'iche' overcomes the limitations imposed by the use of a nonverbal predicate + nominalized subject to express manner in K'iche'. §4.1 deals with specification of the external argument and §4.2 with specification of TAM.

4.1 Specifying the external argument

In order to specify an external argument in basic structures like (54), some other mechanism must come into play. There are two mechanisms available: one is Control; the other involves expanding the structure by the addition of a finite verb one of whose functions in K'iche' is specifically to introduce an external argument for a nominalized clause. This verb also provides a way to introduce morphological TAM marking.

4.1.1 Control

When (54a) is embedded as an interrogative complement, as in (56)-(57), the unexpressed agent argument of the nonfinite passive *v*P can be identified through control. In (56), the controller is the subject of the main verb, *eta'maaj* 'learn'; in (57), it is the oblique argument of the (intransitive) main verb *na'taj* 'remember'.

(56) X–inw–eta'maa–j   [jas   u–tzakab'a–x–ik   sub'].
      CP–A1SG–learn–ACT what   A3SG–cook–PSV–NMLZ   tamalito
      'I learned how to cook tamalitos.'
(57) Ka–na'taj   na ch–w–e   [jas u–tzakab'a–x–ik   sub'].
      ICP–remember still PREP–A1SG–DAT what A3SG–cook–PSV–NMLZ tamalito
   'I still remember how to cook tamalitos.'

As in English, these examples appear to be ambiguous. Under one reading of (56), the speaker has become aware of the process of how the tamalitos are cooked. There is no implication that s/he (or any other specific individual) actually can make tamalitos, simply that s/he is aware of how it is done. We call this the generic reading, a reading which is known to arise commonly in interrogative complements. The other interpretation is that the speaker himself or herself acquired the capacity to cook the tamalitos. This is the control reading. Following Stanley (2011), we assume that there is a genuine ambiguity here, with the agent argument interpreted either through semantic control (§2.2) or as a generic pronoun.

  It is worth pointing out that the semantic control relation between controller and controllee is the same in the K'iche' examples (56)-(57) and their English translations: the experiencer argument of the matrix verb controls the external argument of the event-denoting non-finite clause. Interestingly though, the *syntactic* relation between the controller and the controllee (or better, the event-denoting clause containing the controllee) is different. In English, the controller and the event-denoting clause are clausemates (subject and object, respectively, of the matrix verbs 'learn' and 'remember'). The relevant relations are shown schematically in Figure 5, left, where the controller (A) and the event-denoting clause (CP) are circled.
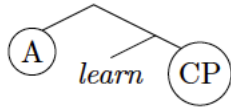
English   K'iche'
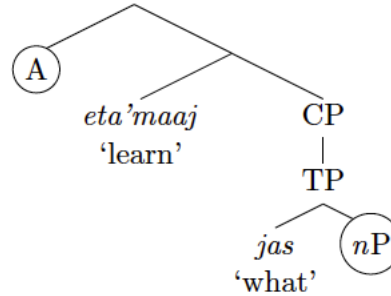
[Figure 5]

In K'iche' (Figure 5, right), the controller (A) and the event-denoting clause (*n*P) are not clausemates. Due to the structure of the manner construction in K'iche' (predicate + nominalization), the nominalization is not the complement of the corresponding matrix verbs, but the *subject of its complement*. Since the semantic relations between controller and controller are the same while the syntactic relations differ, we conclude that not only is the controllee in this construction identified semantically (§2.2), but so too is its controller.

4.1.2 Light verb

When the external argument of the nominalization is specific, but has no potential controller, the basic structure, repeated below as (58a), can be augmented by a form of the verb *'an* 'do' (etymologically *b'an,* a form preserved in some dialects), which takes the external argument as its subject (58b). Note the word order in (58b): the nominalization precedes both *'an* and the external argument (underlined).

(58) a. Jas   u–tzakab'a–x–ik   le   sub'?
        what   A3SG–cook–PSV–NMLZ   DET tamalito
        'How are the tamalitos cooked?'
     b. Jas   u–tzakab'a–x–ik   le   sub'   x–u–'an   le   ixoq?
        what A3SG–cook–PSV–NMLZ DET   tamalito CP–A3SG–do DET woman
        'How did the woman cook the tamalitos?'

Introduction of the external argument in this way is also possible in complement manner questions. If the complement subject is specific and not controlled, then *'an* is obligatory:

(59) X–inw–eta'maa–j   [jas   [u–tzakab'a–x–ik   le   sub'
      CP–A1SG–learn–ACT   what   A3SG–cook–PSV–NMLZ   DET tamalito
        [*(x–u–'an)   le   ixoq]]].
        CP–A3SG–do   DET   woman
      'I knew how the woman cooked the tamalitos.'

As we noted at the outset, the nominalization in (58b) (as well as the one in 59) looks like it might be the complement, or part of the complement, of *'an* 'do'. However, since complements systematically follow their governing head in K'iche', the position of the nominalization before the main verb is unexpected.

    If we look for some independently motivated process that might front the nominalization, a possible candidate – since the nominalization is associated with a wh expression – is wh-Movement. However, under the analysis we proposed in the previous section, the wh expression, *jas*, is the predicate of its clause, and while it might be attracted to clause-initial position by wh-Movement, there is no reason to think that it would bring its nominalized subject along with it through pied piping.

    In any case, it is easy to see that the position of the manner nominalization before the main verb is not due to wh-Movement since the same construction that is used to introduce the external argument in *interrogative* manner clauses is also used to introduce the external argument in *non–interrogative* manner clauses. Compare (24) and (25) (repeated below as 60a and 60b), which do not specify an external argument, with (61) and (62), which do.

(60) a. Je la'   [u–keem–ik   le   paas].
        thus   A3SG–weave:PSV–NMLZ DET belt
        'That's the way to weave the belt.'
        (Lit. 'The weaving of the belt is thus.')
    b. Aninaq [u–tzakab'a–x–ik   le   sub'].
        quick   A3SG–cook–PSV–NMLZ DET tamalito
        'The tamalitos were cooked quickly.'
        (Lit. 'The cooking of the tamalitos was quick.')

(61)   Aninaq [u–keem–ik   le   po't] x–u–'an   le   ixoq.
       quick   A3SG–weave:PSV–NMLZ DET huipil CP–A3SG–do DET woman
       'The woman wove the huipil quickly.'
(62)   . . .we [utz   u–ta'–ik]   k–qa–'an–o.
       . . . if   good A3SG–ask:PSV–NMLZ ICP–A1PL–do–SS
       '. . if we ask well'   [www.glosbe.com]

Since neither *aninaq* 'quick' nor *utz* 'good' has a wh feature, the position of the nominalization before the finite verb cannot be due to wh-Movement.

The question then is how the clause headed by *'an* does relate to the basic structure in Figure 4. Our proposal is straightforward: we suggest that it is a relative clause which modifies the nominalization. This is shown in Figure 6, which represents both cases in which the predicate is a wh expression, as in (58b), and structures in which it is not, as in (61). Hence the nominalization precedes the finite verb simply because relative clauses in K'iche' are post-nominal.
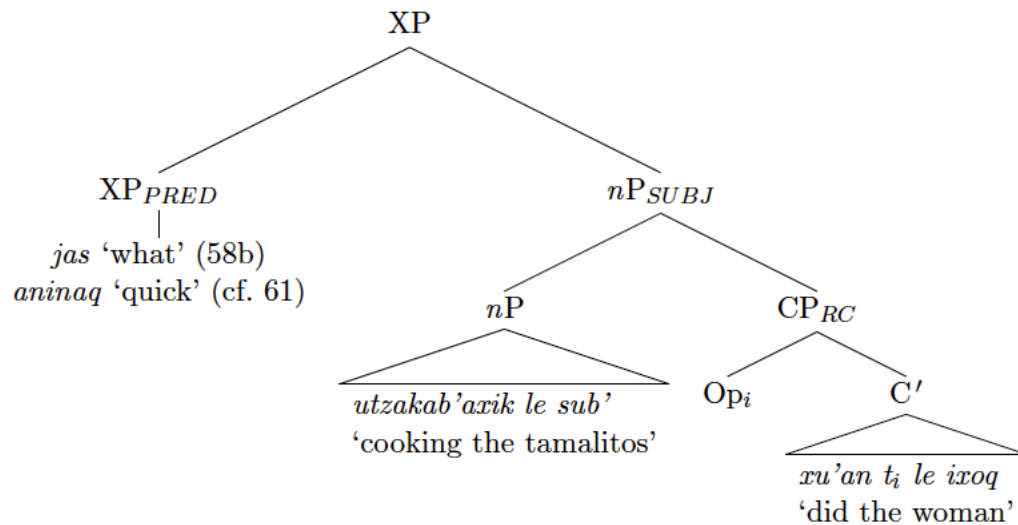
[Figure 6]

Under this proposal, (58b) is literally 'What is the manner of cooking the tamalitos that the woman did?' Or with *aninaq* in place of *jas*, as in (61), 'The weaving of the huipil that the woman did was quick'. *'an* then takes two arguments: the external argument which specifies the agent of the event (*le ixoq* 'the woman') and an internal argument, which denotes the event itself. It is this internal argument which is relativized in Figure 6, shown here as raising of a relative operator *(Op)*.[15]

The intuition here is that the clause headed by *'an* is introduced into the structure in order to specify the agent of the event, since the nominalization itself cannot do so. *'an* plays this role in several other constructions in K'iche'. One involves verb-phrase focus.

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[15] The nominalization *(utzab'axik le sub')* is interpreted in two different positions in Figure 6: it is subject of the nonverbal predicate *(jas* or *aninaq)* and it is object of the light verb *'an*. Interestingly, its interpretation in the two positions is slightly different: as subject of *jas/aninaq*, it refers to the manner of the event while as object of *'an*, it refers to the event itself (thanks to Scott AnderBois for pointing this out to us). This is consistent with our position that the nominalization is semantically vague, with its interpretation determined by the predicate with which it combines (§3.2).

In K'iche', only nominal constituents can be fronted to focus position. Hence, in order to focus a verb phrase, it must be nominalized, as in (63).

(63)   La [u–tzakab'a–x–ik   k'u sub']   tajin k–u–'an–o?
       Q   A3SG–cook–PSV–NMLZ PAR tamalito PROG ICP–A3SG–do–SS
       'Is it cooking tamalitos that she is doing?'

The need for nominalization raises two problems though. One is that the nominalization must function as an argument to some predicate; the other is that agent of the event denoted by the nominalization cannot be specified. Both problems are resolved by introducing *'an* as the main verb. *'an* takes the event nominalization as its object and introduces the agent of the event as its subject.

   Verbs borrowed from Spanish also require the use of *'an*. Such verbs are borrowed in their infinitival form (Norman 1976; López Ixcoy 1997:195) and, as nonfinite forms, they present the same two problems: they need to function as the argument of some predicate, and the agent of the event denoted by the infinitive cannot be specified. The solution is the same: *'an* functions as the main verb, taking the event-denoting infinitive as its object and the external argument of the event as its subject *(pensaar* < Spanish *pensar)*.

(64)   Komo la' x–u–'an   pensaar ...
       since   DEM CP–A3SG–do think
       'Since that one (the man) was thinking...'
       (Lit. 'Since he did thinking... ')   (Norman 1976:53)

   The use of *'an* to introduce the agent of a manner nominalization, as in (58b), (59), and (61)-(64), thus reflects a general repair strategy that the language resorts to when the lexical *v*P is not itself capable of expressing its external argument syntactically (and where that argument cannot be recovered through Control). As we have seen, this dilemma arises in various contexts when *v*Ps are nominalized. In each case, the solution is the same and involves introduction of *'an* into the structure. Since *'an* functions simply to specify the external argument of its event-denoting complement and has little, if any, lexical content of its own, we will refer to it as a *light verb*.

4.2 Specifying TAM

The light verb plays another role, related to the temporal-aspectual-modal (TAM) interpretation of the construction. In examples like (65a), with no finite verb, the temporal interpretation of the sentence must be provided by context or interpreted, by default, as generic. The addition of the light verb, underlined in (65b), not only introduces

the external argument, it also locates the event in the past, this being the usual interpretation for completive aspect in K'iche' (Larsen, 1988).

(65) a. Jas   u–tzakab'a–x–ik   le   sub'?
       what A3SG–cook–PSV–NMLZ DET tamalito
       'How are the tamalitos cooked?'
    b. Jas   u–tzakab'a–x–ik   le   sub'   x–u–'an   le   ixoq?
       what A3SG–cook–PSV–NMLZ DET tamalito CP–A3SG–do DET woman
       'How did the woman cook the tamalitos?'

Likewise, in (61) and (62), the temporal interpretation is fixed by the presence of the light verb — past in (61) and non-past in (62). The same holds in the other constructions discussed above where the light verb introduces the external argument, (63), (64).

When the manner nominalization occurs in the complement to a complement-taking predicate, the absence of the light verb results in an irrealis interpretation (as in the English translation):

(66)   X–na'taj   ch–w–e   [[jas   u–'aan–ik   le   sub']
       CP–remember PREP–A1SG–RN   what A3SG–make:PSV–NMLZ DET tamalito
            ojeer].
            before
       'I remembered how to make tamalitos before.'

In order to produce a realis interpretation, the light verb is required, whether the external argument is referentially dependent on an argument in the matrix or not.

(67) a. X–na'taj   ch–w–e   [[jas u–'aan–ik   le   sub'
        CP–remember PREP–A1SG–RN   what A3SG–make:PSV–NMLZ   DET `tamalito
             [x–in–'an   ojeer]].
             CP–A1SG–LV   before
        'I remembered how I (had) made tamalitos before.'
     b. X–na'taj   ch–w–e   [[jas u–'aan–ik   le   sub'
        CP–remember PREP.A1SG–RN what A3SG–make:PSV–NMLZ DEt tamalito
             [k–in–'an   ojeer]].
             ICP–A1SG–LV   before
        'I remembered how I used to make tamalitos before.'

The complements of both sentences in (67) have realis interpretations: with completive aspect, the complement in (67a) is interpreted as past; with incompletive, (67b), it is interpreted as habitual (this being one of the interpretations of incompletive aspect in K'iche'). Examples (68a-c) illustrate the same generalization.

(68) a. X–u–ta   ch–w–e   [jas   u–'aan–ik].
       CP–A3SG–ask   PREP–A1SG–RN what A3SG–do:PSV–NMLZ
       'He asked me how to do it.'

     b. X–u–ta   ch–w–e   [jas   u–'aan–ik   <u>k–u–'an–o</u>].
       CP–A3SG–ask PREP–A1SG–RN what A3SG–do:PSV–NMLZ ICP–A3SG–LV–SS
       'He asked me how he used to do it.' or '. . . how he could do it.'

     c. X–u–ta   ch–w–e   [jas   u–'aan–ik   <u>x–a–'an–o</u>].
       CP–A3SG–ask PREP–A1SG–RN what A3SG–do:PSV–NMLZ CP–A2SG–LV–SS
       'He asked me how you did it.'

(68a), without *'an*, is interpreted with control and in irrealis mood. (68b), with *'an* in incompletive aspect, is interpreted either as modal (also a possible interpretation of incompletive aspect in K'iche') or as habitual; and (68c), with *'an* in completive aspect, is interpreted as realis past.

    In sum, the light verb serves two functions in K'iche' manner constructions: it provides the means to introduce the external argument of the nominalization when that argument is specific and not controlled. Equally important, it provides the means to specify a TAM value for the construction. When the light verb is not required for either reason – because the external argument of the nominalization is controlled and the interpretation is irrealis – the presence of the light verb (underlined) is strongly dispreferred.

(69) ?*X–inw–etamaa–j   [jas u–tzakab'a–x–ik   le   sub'   <u>k–in–'an–o</u>].
      CP–A1SG–learn–ACT what A3SG–cook–PSV–NMLZ DET tamalito ICP–A1SG–LV–SS
      Intended reading: 'I learned how to cook the tamalitos.'

5 Conclusion

In this paper, we have investigated a set of constructions based on the structure in (70):

(70)   [jas]PRED [u–tzakab'a–x–ik   le   sub']SUBJ
        what   A3SG–cook–PSV–NMLZ DET tamalito
        'How are tamalitos cooked?'
        (Lit. 'What is the way of cooking the tamalitos?')

At the core of our analysis is the idea that (70) (=2a) involves a basic copula structure, but with the twist that the nonverbal predicate is the wh pronoun *jas* 'what', which takes a nominalization referring to (the manner of) an event as its subject. The result is a question about the manner of an event. In languages which have a wider range of nominalizations, the same structure is used to express other types of questions. In Galo (Tibeto–Burman), for example, 'why' questions are formed in an exactly parallel fashion, but are based on a reason nominalization (Post, 2011). Note that Galo is predicate–final.

Galo (Post 2011:271)
(71)   nôk əmbə mendînə jôowə là?

    nó–kə̀   əmbə̀   mèn–dín=əə   jòo=əə   laa

    2.SG–GEN   ANAP.PADV speak–NMLZ:REASON=TOP   what=COP.IPFV CQ
    'What's your reason for talking like that?'

In contrast to manner nominalizations in K'iche', which involve no manner-denoting morphology, reason nominalizations in Galo are formed with a dedicated reason nominalizer *(–dín)*. Nonetheless, the external syntax of the two constructions is the same.

    Manner questions in K'iche' are formed differently from other wh questions in K'iche', which usually involve wh-Movement of a wh argument or adjunct, and no nominalization. We have attributed this to the absence in K'iche' of a wh adverb of manner corresponding to English 'how' or Spanish 'cómo', with the consequence that the language resorts to other means to interrogate manner.

    The basic structure in (70), being a finite wh clause, can be embedded as an interrogative complement (see 71). The morphosyntactic behavior of wh manner clauses in complement function has been particularly important here in establishing that these clauses are indeed finite, despite the fact that they "look" nonfinite (§3.3).

    As discussed in §4, the basic construction in (70) is inherently limited in two respects. Having a nonverbal predicate and a nominalized subject, the construction contains no morphological specification of tense, aspect, or mood. Further, the passive nominalization cannot specify its external argument. In some cases, values for both the external argument and for TAM can be provided through control. However, when they are not, they can be added by extending the construction through a relative clause headed by the light verb *'an* 'do'. This is possible both in matrix questions and in complement interrogatives (see 58b, 59 and many other examples in §4).

    While we have made substantial progress in understanding the construction discussed here, various questions remain to be clarified. One is the relation of this construction to a second way of forming a question about manner/method, illustrated by (72):

(72) Jas x–u–'an   le ixoq   ch–u–tzakab'a–x–ik   le   sub'?
      what CP–A3SG–do DET woman PREP–A3SG–cook–PSV–NMLZ DET tamalito
      'How did the woman cook the tamalitos?'

Like the construction analyzed in this paper, (72) involves the verb *'an* 'do' as well as an event nominalization (*u–tzakab'axik le sub'* 'to cook the tamalitos'). However, the structure is quite different. First, in (72), *'an* is the matrix verb (not the verb of a relative clause) and cannot be omitted. Second, the external argument is obligatorily realized (as subject of *'an*). Finally, the nominalized clause is oblique (introduced by the preposition *chi*) and does not precede the main verb. The construction in (72) is identical to a purpose clause construction ('what did the woman do to cook the tamalitos?'). (72) can be interpreted as a question about manner, with an appropriate answer being 'she cooked them quickly', or as a question about the method used to achieve a result, appropriately answered by 'first she did this, and then she did that'. It is fairly clear how the method interpretation arises when 'do what/something' is combined with a purpose clause: to do something in order to bring about a certain result implies that one brings about a certain result in a certain way, via a certain method. If this is the right way to view examples like (72), the manner reading apparently arises as an extension or grammaticization of the method interpretation.[16]

A related issue is the semantics of the construction in (70) (the one we have analyzed here) and the one in (72), and their relation to the manner vs. method distinction (Jaworski, 2009; Sæbø, 2016). As far as we have been able to determine, each construction can be associated with both meanings. Yet speakers do not always regard them as interchangeable. The factors which distinguish the two remain to be investigated.

Finally, the manner construction analyzed here bears on the theory of Control since, when Control is involved, both the controllee and the controller appear to be identified semantically, rather than syntactically. If the passive analysis of *–iik* nominalizations is correct, the *controllee* is identified as agent rather than as subject (§2.2). The

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[16] Lin (2015:277) contains related observations about several Formosan languages (Amis and Kavala) in which 'how' questions are based on 'what' questions, plus a verb phrase denoting purpose. In Amis and Kavala too, this construction can be used to answer a question about either method or manner.

identification of the *controller* likewise appears to depend more on the semantic relation between controller and controllee than to the syntactic one. For, as we observed in §4.1.1, the *semantic* relation between the two is the same in languages like K'iche' and English, while the *syntactic* relation between them is different. We do not consider these problems for our analysis, but but see them as interesting challenges for the theory of Control.

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Telma Angelina Can Pixabaj
kaantelma@gmail.com

Judith Aissen
aissen@ucsc.edu