

# Some causative alternations in K'iche', and a unified syntactic derivation

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## 1 Introduction

This paper is an investigation of the so-called Causative morpheme *-isa* in K'iche', a Mayan language spoken in Guatemala.<sup>1</sup> I focus on three contexts in which *-isa* can appear.

### 1. CAUSATIVE

*-isa* productively attaches to some intransitive verbs to form a transitive counterpart

### 2. DATIVE ALTERNATION

*-isa* participates in an alternation resembling the Double Object/Complement distinction in English

### 3. PSYCH-VERBS

A small set of psychological predicates can appear with or without *-isa*, with no (apparent) semantic difference.

There are two goals to this paper. First, I aim for descriptive adequacy, correctly laying out where *-isa* occurs, and the various morphological, syntactic, and semantic properties associated with each use. After laying out the distribution, I will propose how we can account for the disparate set of uses above. Specifically, I will propose the generalization in (1).

- (1) *-isa* only attaches to telic predicates which are Internally Caused.

The claim in (1) follows on much recent work on the syntax and semantics of (anti-)causatives. In particular, it has been shown that the appearance of valency-marking morphology is sensitive to (lexical) aspect as well as the lexical semantic properties of the root (Folli 2002; Folli and Harley 2007; Alexiadou et al. 2006; Alexiadou and Anagnostopoulou 2006; Alexiadou and Schäfer 2006; Schäfer 2008) among others.

Importantly, the syntactic/semantic conditions in (1) can be met in a few different ways. Specifically, the notion of telicity is known to be sensitive not just to verb class, but also to

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1

A/B = Set A/B

1/2/3 = 1/2/3 person

CMP = completive

DEF = definite determiner

DET = determiner

FEM = feminine

INCMP = incompletive

MASC = masculine

RN = relational noun

sg/pl = singular/plural

properties of the object (Tenny 1987). I'll suggest that in *all* contexts which the conditions in (1) are met, *-isa* appears to introduce the external argument. The implication is that *-isa* does not mark causativity *per se*, rather its appearance reflects a specific syntactic configuration. The analysis here is in the spirit of Embick (2004), who argues that valency morphology is sensitive to syntactic configuration.

## 2 Background on K'iche'

K'iche' (also, Quiche, Kiche, K'ichee) is a Mayan language spoken in Guatemala by a relatively stable speech community.<sup>2</sup> It displays ergative-absolutive alignment in its verbal agreement system, and does not have case-marking. Canonical word order is VOS.<sup>3</sup>

The verbal template is given in (2). *-isa* always appears following the root, usually root-attached.<sup>4</sup>

- (2) ASPECT – Set B – (Set A) –  $\sqrt{\text{ROOT}}$  – isa – STATUS MARKER  
Set A = ergative  
Set B = absolutive

The K'iche' dialect reported here is from the town of Momostenango. All examples in this paper are from a single, middle-aged male speaker, elicited in Los Angeles using Spanish and English. The patterns were confirmed by a second middle-aged female speaker, as well as a speaker of the Cantel dialect in his late thirties.

## 3 Causatives

The literature on K'iche' treats *-isa* as a causative morpheme which attaches to one-place predicates, deriving two-place predicates (Larson 1988; López Ixcoy 1997; Campbell 2000). Table 1 displays a non-exhaustive list of verbs which form transitives using *-isa*.

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<sup>2</sup>2,330,000 speakers, with 300,000 monolinguals (<http://www.ethnologue.com/language/quc>)

<sup>3</sup>In the data collected, we've found considerable variation in word order. We suspect some is due to Spanish/English influence, particularly since English and Spanish were the languages used for elicitation. I will return briefly to subject of word order later.

<sup>4</sup>The Status Marker is a characteristic of Mayan languages, reflecting the valency of the verb, and position in a syntactic domain (Henderson 2012).

intransitive		transitive	
<i>kam</i>	'die'	<i>kamisa</i>	'kill'
<i>num</i>	'be/get hungry'	<i>numisa</i>	'make hungry'
<i>k'iy</i>	'grow (intrans)'	<i>k'iyisa</i>	'grow/raise'
<i>k'at</i>	'burn'	<i>k'atisa</i>	'burn'
<i>q'ay</i>	'rot'	<i>q'ayisa</i>	'rot'
<i>b'ison</i>	'be/get sad'	<i>b'isonisa</i>	'sadden'
<i>sa'</i>	'be lost'	<i>satisa</i>	'confuse'
<i>kix</i>	'feel ashamed'	<i>kixisa</i>	'make feel ashamed'
<i>kub'</i>	'sit'	<i>kub'isa</i>	'make sit'
<i>k'aman</i>	'be/get used to'	<i>k'amanisa</i>	'make used to'
<i>war</i>	'be/fall asleep'	<i>wartisa</i>	'put to sleep'
...		...	

Table 1: Verbs forming intransitive-transitive pairs with *-isa*

As seen in examples (3a) and (3b), the appearance of *-isa* naturally requires the appearance of ergative agreement morphology on the verb; *-isa* always creates a two-place predicate.

- (3) a. xkam ri tz'i'  
x-∅-kam ri tz'i'  
CMP-3sgB-die DEF dog  
'The dog died'
- b. xukamisaj ri tz'i' la a Xwan  
x-∅-u-kam-isa-j ri tz'i' la a Xwan  
CMP-3sgB-3sgA-die-ISA-SM DEF dog DET MASC John  
'John killed the dog'

While this use of *-isa* appears to be entirely productive, there is a large class of verbs which does not use *-isa* to mark the transitive pair. A non-exhaustive list is given in Table 2.

intransitive		transitive	
<i>tas</i>	‘separate’	<i>tas</i>	‘separate’
<i>b’us</i>	‘fold’	<i>b’us</i>	‘fold’
<i>jek’</i>	‘slide’	<i>jek’</i>	‘slide’
<i>sut</i>	‘spin’	<i>sut</i>	‘spin’
<i>ch’opin</i>	‘bounce’	<i>ch’opin</i>	‘bounce’
<i>miq’</i>	‘boil/melt’	<i>miq’</i>	‘boil/melt’
<i>pax</i>	‘break’	<i>pax</i>	‘break’
<i>b’irb’it</i>	‘shake’	<i>b’irb’it</i>	‘shake’
<i>paq’</i>	‘crush’	<i>paq’</i>	‘crush’
...		...	

Table 2: Verbs forming intransitive-transitive pairs without *-isa*

As the examples in (4a) and (4b) show, the transitive form of the verb, while still triggering ergative agreement, does not appear with *-isa*.

- (4) a. xpax la laq  
 x- $\emptyset$ -pax                    la    laq  
 CMP-3sgB-break DET bowl  
 ‘The bowl broke’
- b. xupaxij la laq la a Xwan  
 x- $\emptyset$ -u-pax-ij                                    la    laq    la    a    Xwan  
 CMP-3sgB-3sgA-break-SM DET bowl DET MASC John  
 ‘John broke the bowl’

The distinction between the classes of verbs in Table 1 and Table 2 is cross-linguistically quite well attested, and I’ll assume that what distinguishes the two classes of verbs has to do with how likely an event is conceptualized as occurring “spontaneously”, that is, without some external force to bring it about (Smith 1970; Haspelmath 1993; Schäfer 2008; Alexiadou et al. 2015). An event like “fold” (Table 2) is more likely to require an external effort to make the event come about, and thus, it is less likely to occur spontaneously. In contrast, an event like “grow” (Table 1) is more likely to happen without an external effort, and so is more likely to occur spontaneously.

Terminologically, I’ll call the verbs in Table 1 “Internally Caused” – although the reader should be advised that I’m using a slightly different notion of internal causation than Levin and Rappaport-Hovav (1995), who treat the distinction as categorical. I’ll assume that internal causation is a gradient notion, and is dependent on other factors that we might loosely call “context”.<sup>5</sup>

Given this terminological distinction, I make the following generalization.

<sup>5</sup>These factors include the type of object, the pragmatic conditions, and even the type of agent. I will return to this later.

(5) **Internal Causation Restriction (ICR)**

Only verbs which are Internally Caused form transitive counterparts with *-isa*

The validity of the ICR will be show to be correct in the later sections of the paper, where will we see that the ICR holds for all appearances of *-isa*. Before we proceed, I'll note some further properties associated with the causative use of *-isa*.

First, *-isa* does not restrict the  $\theta$ -role of the subject to an Agent/Causer, as might be expected by a “true” causative. In (6), Agents, Causers, and Instruments are all acceptable as subjects of a causative verb.<sup>6</sup>

- (6) ri Xwan/kab'raqaan/ch'ich' xukamisaj ri ali Maria  
 ri Xwan/kab'raqaan/ch'ich' x- $\emptyset$ -u-kam-isa-j ri ali Maria  
 DEF John/earthquake/knife CMP-3sgB-3sgA-die-ISA-SM DEF FEM Maria  
 ‘John/the earthquake/the knife killed Maria’

Second, the verbs in Table 1 (and Table 2, where applicable) are ambiguous in their intransitive form between a stative and inchoative reading.

- (7) xnum ri tz'i'  
 x- $\emptyset$ -num ri tz'i'  
 CMP-3sgB-be/get.hungry DEF dog  
 a. ‘The dog is hungry’  
 b. ‘The dog got hungry’

The importance here is that it is actually ambiguous whether *-isa* is attaching to the inchoative or the stative version. If it's the latter, then we would conclude that *-isa* “comes with” the causative event. However, in §6, I show that *-isa* actually attaches to the inchoative form, which involves null morphology, and further, that *-isa* does not itself introduce an additional event. The significance, then, is that *-isa* merely functions to add an argument that is interpreted as the subject of that event. For now though, it is sufficient to observe that from the data seen so far, there is an ambiguity as to which stem *-isa* attaches to.

To review the properties discussed in this section: 1) *-isa* is used to form transitive forms of Internally Caused verbs. 2) *-isa* does not specify the  $\theta$ -role of its argument. 3) *-isa* ambiguously attaches to an inchoative (change-of-state) or result-state base.

#### 4 Dative Goal Alternation

Outside of the causative use, *-isa* can also appear in what superficially resembles the Double Object/Double Complement alternation in English. In (8a) and (9a), the Goal thematic argument is licensed with a RELATIONAL NOUN – essentially an inflected preposition – and the verb is intransitive.

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<sup>6</sup>There are however, restrictions on word order here, which I ignore for expositional purposes.

- (8) a. *xwun la tz'i' chwij*  
 x- $\emptyset$ -wun            la    tz'i' chwij  
 CMP-3sgA-howl DET dog RN.1sg  
 ‘The dog howled at me’
- b. *xinuwwunisaj la tz'i' (\*chwij)*  
 x-in-u-wun-isa-j                    la    tz'i' (\*chwij)  
 CMP-1sgB-3sgA-howl-ISA-SM DET dog (RN.1sg)  
 ‘The dog howled at me’
- (9) a. *xxoj chirij ri mesa*  
 x- $\emptyset$ -xoj                    chirij    ri    mesa  
 CMP-3sgB-vomit RN.3sg DET table  
 ‘He threw up on the table’
- b. *xuxojisaj (\*chirij) ri mesa*  
 x- $\emptyset$ -u-xoj-isa-j                    (\*chirij) ri    mesa  
 CMP-3sgB-3sgA-vomit-ISA-SM (RN.3sg) DET table  
 ‘He threw up on the table’

In (8b) and (9b) the verb takes *-isa* and expresses the Goal argument in the absolutive agreement on the verb. In these contexts, adding the relational noun back into the phrase results in ungrammaticality.

Not just any Goal argument can be promoted. For instance, a phrase like *xripip chwij*, ‘he flew at me’, cannot be transformed into *\*xinuripipisaj*, ‘(he) flew at me’. A list of verbs I’ve identified as being able to appear in this alternation is given in Table 3.

with RN Goal		with object Goal	
<i>xoj</i>	‘vomit’	<i>xojisa</i>	‘vomit on X’
<i>tix(nam)</i>	‘sneeze’	<i>tixisa</i>	‘sneeze on X’
<i>wun</i>	‘howl’	<i>wunisa</i>	‘howl at X’
<i>kik’</i>	‘bleed’	<i>kik’isa</i>	‘bleed on X’
<i>xub’xut</i>	‘(bird) whistle’	<i>xub’xutisa</i>	‘(bird) whistle to X’
<i>koq’</i>	‘(baby) cry’	<i>koq’isa</i>	‘(baby) cry for/at’

Table 3: Verbs appearing in the Dative Alternation with *-isa*

What unifies the verbs in Table 3 is that they are all Verbs of Emission, involving “[n]on-voluntary emission of stimuli that impinge on the sense” (Levin and Rappaport-Hovav 1995:91, citing Perlmutter).<sup>7</sup> Verbs of Emission are in fact categorized as Internally Caused, since they are conceived of as being more likely to occur without an outside force

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<sup>7</sup>Given this distribution, I hypothesize that there is a further distinction between Verbs of Manner of Emission (sound, smell) and Verbs of Substance of Emission (bodily function, sound) (Fábregas and Varela 2006). Apparently, only the latter can participate in this alternation.

bringing them about. That is, *xoj*, 'vomit', does not typically require some outside Agent to make the event of vomiting come about. Thus, the ICR in (5) holds here as well.

Importantly, neither (8b) nor (9b) can mean anything like "The dog caused me to howl" or "the table caused me to vomit". That is, there is no obvious causative meaning here. This is confirmed in speaker intuition: consultants do not readily see any difference in meaning between the forms (8a) versus (8b) and (9a) versus (9b). It is also seen with modification that targets Agents/Causers. For instance, the adverbial *chub'anik*, 'on purpose',<sup>8</sup> is infelicitous with either form of the verb.<sup>9</sup>

- (10) a. # *chub'anik xkik' chwij*  
 #*chub'anik x-∅-kik' chwij*  
 on.purpose CMP-3sgB-bleed- RN.1sg  
 '#He bled on me on purpose'
- b. # *chub'anik xinukik'isaj*  
 #*chub'anik x-in-u-kik'-isa-j*  
 on.purpose CMP-1sgB-3sgA-bleed-ISA-SM  
 '#He bled on me on purpose'

Thus, it appears that the subject of the ISA-form retains its Experiencer  $\theta$ -role, and moreover, the promoted object is not construed as being an Agent/Causer either; it too retains its Goal  $\theta$ -role.

The promoted object is a true syntactic object in all senses. For instance, it triggers Set B absolutive agreement and it can be passivized, (11), a process which is restricted in K'iche' to true verbal objects.

- (11) *xxojisax la mesa (rumaal la a Xwan)*  
*x-∅-xoj-isa-x la mesa (rumaal la a Xwan)*  
 CMP-3sgB-vomit-ISA-PASS DET table (RN.3sg DET MASC John)  
 'The table was thrown up on (by John)'

Lastly, there is a restriction on the type of object for the ISA-form: only definite objects are allowed. With the relational noun, both definite and indefinite objects are permitted.<sup>10</sup>

- (12) a. *xinxoj chirij (ri) me's*  
*x-in-xoj chirij (ri) me's*  
 CMP-1sgB-vomit RN.3sg DET cat  
 'I threw up on the/a cat'

<sup>8</sup>This form is probably technically a Purpose clause, meaning something like "in order to do it".

<sup>9</sup>Note that these phrases are not ungrammatical. They have the pragmatically odd reading in which 'he purposely bled on me'. Importantly, this reading is equally available independently of the ISA-form, and there is no additional reading invoked in the ISA-form that is compatible with the causative morpheme.

<sup>10</sup>I understand the lack of a determiner to signal indefiniteness, although in all fairness, definiteness is poorly understood in K'iche'. It may be that the relevant property is more accurately described as "specificity".

- b. xinxojisaj \*(ri) me's  
 x- $\emptyset$ -in-xoj-isa-j \*(ri) me's  
 CMP-3sg.B-1sg.A-vomit-ISA-SM DET cat  
 'I threw up on the cat'
- (13) a. xun la tz'i' chikij (ri) ixoq'ib'  
 x- $\emptyset$ -wun la tz'i' chikij (ri) ixoq'ib'  
 CMP-3sgB-howl DET dog RN.3pl DEF women  
 'The dog howled at (the) women'
- b. xu'wunisaj \*(ri) ixoq'ib' la tz'i'  
 x-ee-u-wun-isa-j \*(ri) ixoq'ib' la tz'i'  
 CMP-3plB-3sgA-howl-ISA-SM DEF women DET dog  
 'The dog howled at the women'

With the relational noun in (12a) and (13a), the definite determiner *ri* can be present or omitted, and give rise to the reading 'I threw up on the cat' or 'I threw up on a (unspecified) cat', respectively. With the ISA-form, however, only the definite form is permitted, and the ISA-form can only be used to express 'I threw up on the cat'.

To summarize the Dative Alternation: 1) An oblique Goal can be promoted to the status of core object. 2) Only Verbs of Emission, which are internally caused, are able to undergo this alternation. 3) There is no causative meaning diagnosable with the ISA-form; all arguments retain their  $\theta$ -roles. 4) Promoted objects must be definite.

## 5 Psych-verbs

Finally, a small set of psychological predicates alternate between a causative and non-causative form. The complete list of verbs is given in Table 4, and examples of each are given in (14)-(16).

plain-form		isa-form	
<i>na'</i>	'remember, sense'	<i>na'tisa</i>	'remember'
<i>achik'</i>	'dream'	<i>achik'isa</i>	'dream'
<i>loq'</i>	'love'	<i>loq'isa</i>	'love'

Table 4: Three psych-verbs which can occur with *-isa*

- (14) a. kuloq'aj la ali Maria la a Xwan  
 k- $\emptyset$ -u-loq'-aj la ali Maria la a Xwan  
 INCOMP-3sgB-3sgA-love-SM DET FEM Maria DET MASC John  
 'John loves Maria'

- b. kuloq'isaj la ali Maria la a Xwan  
 k- $\emptyset$ -u-loq'-isa-aj                      la ali Maria la a Xwan  
 INCOMP-3sgB-3sgA-love-ISA-SM DET FEM Maria DET MASC John  
 'John loves Maria'
- (15) a. xatinwachik'aj  
 x-at-inw-achik'-aj  
 CMP-2sgB-1sgA-dream-SM  
 'I dreamed about you'
- b. xatinwachik'isaj  
 x-at-inw-achik'-isa-j  
 CMP-2sgB-1sgA-dream-ISA-SM  
 'I dreamed about you'
- (16) a. xna'tal ri ab'i chwee  
 x- $\emptyset$ -na't-al                      ri ab'i                      chwee  
 CMP-3sgB-remember-PART DET your.name RN.1sg  
 'I remembered your name'
- b. xinna'tisaj ri ab'i  
 x- $\emptyset$ -in-na't-isa-j                      ri a-b'i  
 CMP-3sgB-1sgA-remember-ISA-SM DET 2sgA-name  
 'I remembered your name'

Before getting to the differences between the alternations above, I first note that psych-verbs are also classified as Internally Caused, as they are not brought about not by means of an external force. As such, they too fall under the ICR in (5).

Observe also that two of the three verbs above, *loq'*, 'love'<sup>11</sup> and *achik'*, 'dream', are actually transitive, triggering ergative agreement in both the plain and ISA-form. On its surface this straightforwardly contradicts the generalization that *-isa* can only attach to intransitive verbs.

Speakers report no clear distinction between the (a) and (b) forms above, although *loq'isa*, 'love.ISA' can sometimes have a more emphatic meaning. Speakers will sometimes report that (17b) means "John *really* loves Maria". This emphatic reading is not always present/salient with *loq'*, and it is apparently never present with 'dream' and 'remember'.<sup>12</sup>

Like with the Dative Alternation, the subject retains its Experiencer  $\theta$ -role in both the plain and ISA-form. Here, the addition of the adverbial *chub'anik*, 'on purpose', results in ungrammaticality.<sup>13</sup>

<sup>11</sup>*Loq'* is homophonous with the verb for 'buy'.

<sup>12</sup>It's unclear to me yet what triggers this emphatic reading. While emphatic readings for causatives are cross-linguistically well-attested (cf Aikhenvald (2011)), an emphatic reading for *-isa* is actually generally not available in any context except those just discussed. But see also the iterative use discussed in the conclusion to this paper.

<sup>13</sup>In contrast to this test with the Dative Alternations, speakers uniformly reject these sentences. That is, there is nothing that can pragmatically save these here.

- (17) a. \* chub'anik kuloq'aj la ali Maria la a Xwan  
 chub'anik k-∅-u-loq'-aj la ali Maria la a Xwan  
 on.purpose INCMP-3sgB-3sgA-love-SM DET FEM Maria DET MASC John
- b. \* chub'anik kuloq'isaj la ali Maria la a Xwan  
 chub'anik k-∅-u-loq'-isa-aj la ali Maria la a Xwan  
 on.purpose INCMP-3sgB-3sgA-love-ISA-SM DET FEM Maria DET MASC John

*Na'*, 'sense, remember' is slightly different in that it alternates between an intransitive, stative form, and the transitive eventive ISA-form. A literal translation of (16a) is something like 'Your name was being remembered to me'.

An important factor discussed in many analyses of psych-verbs is the argument structure. It has been proposed that for certain verbs, the surface object is actually the logical subject, e.g., "please"-class verbs (Belletti and Rizzi 1988; Pesetsky 1995). In such an analysis, the surface object is the cause or source of the surface subject's mental state, and so is merged as the "deep" subject, and then subsequent movement derives the surface word order. Under this hypothesis, we might derive the difference between the plain and ISA-form as similar to the difference between "fear" and "scare", e.g., 'John fears snakes' and 'Snakes scare John', where "scare" means 'cause to fear'.

This analysis is difficult to extend to K'iche'. In both cases, the surface subject can bind a reflexive anaphor, suggesting that the surface grammatical relations are the underlying grammatical relations.<sup>14</sup> (Note that reflexive anaphors are Relational Nouns. Thus the verb will remain transitive, as it still has a nominal object.)

- (18) a. kinloq'aj wib'  
 k-∅-in-loq'-aj wib'  
 CMP-3sgB-1sgA-love-SM RN.1sg  
 'I love myself'
- b. kinloq'isaj wib'  
 k-∅-in-loq'-isa-j wib'  
 CMP-3sgB-1sgA-love-ISA-SM RN.1sg  
 'I love myself'

Furthermore, the surface object can be passivized for both the underlyingly transitive verbs.<sup>15</sup>

- (19) a. xlooq' la ali Maria (rumaal la a Xwan)  
 x-∅-looq' la ali Maria (rumaal la a Xwan)  
 CMP-3sgB-love.PASS DET FEM Maria RN.3sgB DET MASC John  
 'Maria was loved'

<sup>14</sup>In fact, the oblique subject of *na'*, 'sense, remember', can bind a reflexive object as well. Munro (2008) details further subject properties of oblique subjects in K'iche'.

<sup>15</sup>Passives in K'iche' are formed in one of two ways: if the verb stem consists of two or more syllables, then a suffix *-x* is affixed. Otherwise, the vowel of the verb root is lengthened.

- b. xloq'isax la ali Maria (rumaal la a Xwan)  
 x- $\emptyset$ -loq'-isa-x                    la ali Maria (rumaal la a Xwan)  
 CMP-3sgB-love-ISA-PASS DET FEM Maria RN.3sgB DET MASC John  
 'Maria was loved'

If *Maria* were actually a subject in (19b), it would be surprising that passivization could promote it to a subject position on the surface.

Moreover, it's notable that we do not see a change in grammatical relations between plain and ISA-form. That is, the grammatical roles of each argument remain constant, regardless of whether *-isa* is employed. If this were parallel to the "fear/scare" alternation, then we might expect to see a reversal of grammatical roles here. Thus, I find it implausible that there is a distinct causative difference resulting from differences in argument structure between the plain and ISA-forms.

And as a final descriptive comment, like the Dative Alternation, the ISA-form requires the object to be definite.

- (20) a. xinwachik'aj (ri) ixoq'ib'  
 x-ee-inw-achik'-aj                    (ri) ixoq'ib'  
 CMP-3plB-1sgA-dream-SM DET women  
 'I dreamed about (the) women'
- b. xinwachik'isaj \*(ri) ixoq'ib'  
 x-ee-inw-achik'-isa-j                    \*(ri) ixoq'ib'  
 CMP-3plB-1sgA-dream-ISA-SM DET women  
 'I dreamed about the women'

The phrase in (20b) cannot have an indefinite object, while (20a) can.

To review the properties of psych-verbs: 1) *-isa* attaches to three psych-verbs, two of which are transitive in both forms. 2) There is no obvious causative semantics, and no Agent/Causer introduced. 3) *-isa* imposes definiteness restrictions on the object.

## 6 Analysis: the sensitivity to syntax

A proper account of *-isa* must explain at least these three things.

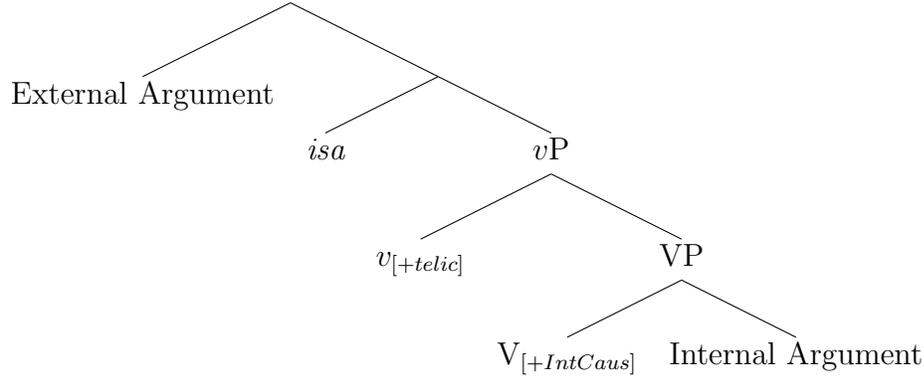
1. Why *-isa* is restricted to verbs of Internal Causation.
2. Why *-isa* does not appear to restrict the  $\theta$ -role of its argument? (Or why doesn't *-isa* always entail a causative reading?)
3. Why does *-isa* impose definiteness restrictions on certain objects.

I propose that the disparate properties discussed above can be unified in the generalization in (1), repeated here in (21).

- (21) *-isa* only attaches to telic predicates which are Internally Caused.

I further propose that the descriptive properties of (21) are translatable into the syntactic configuration sketched in (22).

(22)



The idea is that *-isa* spells out the head that introduces the external argument only when the relevant properties of its *vP* complement have been met. The two relevant properties are, 1) the root must have the semantics of Internal Causation, defined earlier; and 2) the predicate must be telic. I address each of these properties in turn.

First, the need for the Internal Causation clause in (21) is empirically justified in the three classes of predicate examples above: the Causatives, the Dative Alternation, and the Psych-verbs are all Internally Caused. Moreover, we saw that verbs which are not internally caused, like *pax*, ‘break’, or *ripip ch-X-e*, ‘fly at X’, cannot take *-isa* to introduce their external argument, as these predicates don’t qualify as being able to arise “spontaneously”, i.e., without external effort.

Furthermore, we can test this restriction by adjusting the context to make an otherwise Internally Caused verb into an Externally Caused verb. For instance, the verb *xub’xut*, ‘(bird) to whistle’ participates in the Dative Alternation. However, *xub’xut* can also be used to mean ‘(human) whistle’, as if to get someone’s attention. In this context, the Dative Alternation is not permitted; only the version with the Relational Noun is allowed.

(23) [Context: Maria sees me walking down the street and wants to get my attention.]

- a. kaxub’xut la ali Maria chwij  
 k(a)-∅-xub’xut la ali Maria chwij  
 INCMP-3sgB-sing DET FEM Maria RN.1sg  
 ‘Maria is whistling at/to me’
- b. \* kinuxub’xutisaj la ali Maria  
 k-in-u-xub’xut-isa-j la ali Maria  
 INCMP-1sgA-3sgB-sing-ISA-SM DET FEM Maria

Because whistling to get someone’s attention is an agentive act that cannot arise without external effort, *-isa* cannot be used to introduce the external argument.

The telicity requirement is more subtle and requires a more formal explanation. First, recall that the verbs in Table 1 are ambiguous between stative and inchoative readings. *Num* can mean either ‘be hungry’ or ‘get hungry’. I propose that *-isa* attaches onto the inchoative form of this verb, thus ensuring that these are bounded events. Normally, inchoative morphology is silent, but K’iche’ contains a limited number of “pure” adjectives. These

adjectives can be verbalized to form inchoatives. The adjective *chom*, 'fat' forms a verb *chomar*, 'to become fat', and the adjective *chaq'*, 'ripe', forms an inchoative verb *chaq'ij*, 'to get ripe'.<sup>16</sup> Crucially, the transitive forms of these verbs include this verbalizing element.<sup>17</sup>

- (24) a. xuchomarisaj la ak'  
 x-∅-u-chom-ar-isa-j la ak'  
 CPM-3sgB-3sgA-fat-INCH-ISA-SM DET pig  
 'He fattened the pig'
- b. xu'chaq'ijisaj la ooj la q'ij  
 x-ee-u-chaq'-ij-isa-j la ooj la q'ij  
 CMP-3plB-3sgA-ripe-INCH-ISA-SM DET avocado DET sun  
 'The sun ripened the avocado.'

Thus, we have evidence that the causative use of *-isa* attaches to inchoative verbs.

However, we would still like to know how many events there are. That is, there is the possibility that *-isa* comes with an additional event on top of the inchoative event (cf Levin and Rappaport-Hovav (1995), among others). That is, how do we know that the causative form of the verbs are not "cause to become X"? Event modification tests suggests that both the inchoative and causative forms have the same number of events. Under the hypothesis that *-isa* introduces a causative event on top of the inchoative event, then we predict that there should be two targets for modification by adverbials: the causative and the inchoative event. I provide two tests showing that there is only one event.

First, (25) reveals that attempts to directly modify both events results in ungrammaticality.<sup>18</sup>

- (25) \* no'jim xuk'atisaj la ja la a Xwan chanim  
 no'jim x-∅-u-k'at-isa-j la ja la a Xwan chanim  
 slow CPM-3sgB-3sgA-burn-ISA-SM DET house DET MASC John fast  
 '[intended: 'John slowly caused the house to burn to quickly']

Note that no amount of contextualization can save (25); it is unambiguously bad. A second test for two events is given in (26), which has a continuation.

- (26) no'jim xuk'atisaj la ja la a Xwan (#i chanim xk'atik)  
 no'jim x-∅-u-k'at-isa-j la ja la a Xwan (#i chanim  
 slow CPM-3sgB-3sgA-burn-ISA-SM DET house DET MASC John (and fast  
 x-∅k'at-ik)  
 CMP-3sgB-burn-SM)

<sup>16</sup>According to Larson (1988) the morphemes used to form the inchoatives are idiosyncratic and lexically determined. (Thanks to Jessica Coon for suggesting that I investigate this.)

<sup>17</sup>Note further that *tz'il*, 'dirty', with inchoative *tz'iloj*, 'get dirty' does not form a causative with *-isa*. The transitive form is homophonous with the inchoative: *tz'iloj*, 'make dirty'. This is predicted by the fact that *-isa* only attaches to Internally Caused predicates, and 'get dirty' is not Internally Caused. Moreover, this undermines an "elsewhere" condition story for *-isa* (suggested by Heidi Harley, p.c.), where *-isa* spells out a *v* that is not directly root-attached.

<sup>18</sup>A sentence final adverb is generally degraded, but not ungrammatical. The canonical place for adverbs is preverbally.

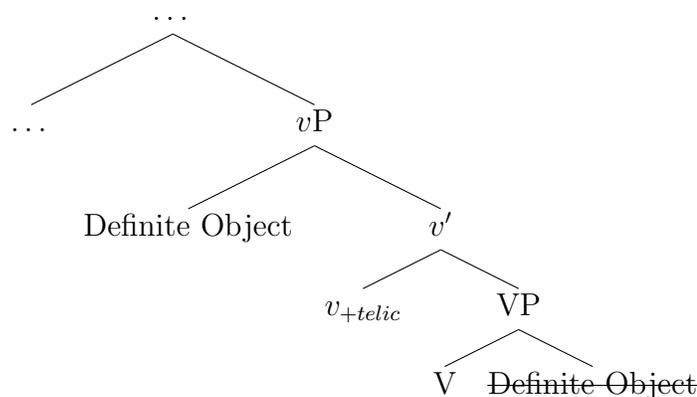
‘John burned the house slowly (#and it burned quickly)’

If the adverb *no’jim*, ‘slow’ can modify the causation event, we should expect a felicitous reading of this phrase, where John sets the house on fire quickly, but the house burns slowly. Speakers uniformly reject this phrase as a contradiction, indicating that the adverb in both cases is modifying the same (inchoative) event.

For both of these tests, if there are two events – a causation event and an inchoative event – then we expect to be able to pick out both of them. While I do not think that these tests are conclusive, they are at least highly suggestive that there is only event even with the causative, and that *-isa* attaches to an already eventive – inchoative – predicate, thus satisfying the restriction in (21) that *-isa* only attaches to telic *v*Ps.

The question now arises of how the telicity restriction manifests in the other predicates, that is, the Dative Alternation and the Psych-verbs. I suggest that the definiteness of the object ensures the telicity here. It is well-known that there is an interaction between the definiteness of the object and the (lexical) aspect of the predicate (Tenny 1987). A great deal of recent work has shown that there is a low projection, around *v*P, that mitigates this event structure (Borer 2005; MacDonald 2006; Travis 2010). I’ll assume for ease of exposition that *v* is the projection that controls the aspectual information. I propose that definite objects are required to move to spec-*v*P, and this movement sets the telicity of the *v*P.<sup>19</sup>

(27)



<sup>19</sup>See Coon (2010) for arguments from Chol, a related Mayan language, that definite objects necessarily move out of the verb phrase. She shows that VOS order is contingent on the object not being definite, while VSO order requires the object to be definite. The facts in K’iche’ appear to be more complicated than Chol’s, as VOS order is permitted with definite objects, but the basic analysis should be similar, I expect.

There are two pieces of evidence supporting this movement. The first piece of evidence comes from word order. While K'iche' is canonically VOS, it does permit VSO word order under certain circumstances. One prerequisite for VSO order is that the object must be definite.<sup>20</sup>

(28) xu'kamisaj la a Xwan \*(ri) me's

x-ee-u-kam-isa-j                      la    a            Xwan \*(ri) me's  
 CMP-3plB-3sgA-die-ISA-SM DET MASC John DEF cat

'John killed the cats'

Assuming that verb-initial order results from VP-fronting in Mayan, then the VSO order results from the object moving out of VP prior to remnant movement of the verb phrase. Crucially, definite objects are required to undergo this movement (although further movements may obscure this at the surface). (See Coon (2010) for precisely such a proposal in Chol.)

Second, modification with adverbials that target events shows that with the Dative Alternation, the event structure is more localized. The addition of *laj*, 'almost' results in two readings when the Relational Noun is used, but only one when the ISA-form is used.

(29) a. laj xwun la tz'i' chwij

laj    x-∅-wun                      la    tz'i' chwij  
 almost CMP-3sgB-howl DET dog RN.1sg

- a. 'The dog almost howled at me.' (The dog didn't howl.)
- b. 'The dog almost howled at me.' (It howled at someone else.)

b. laj xinuwunisa:j la tz'i'

laj    x-in-u-wun-isa-j                      la    tz'i'  
 almost CMP-1sgB-3sgA-howl-ISA-SM DET dog

- a. 'The dog almost howled at me.' (The dog didn't howl)
- b. ~~'The dog almost howled at me.'~~ (It howled at someone else.)

In (29a), we can get both a counterfactual reading ('the dog didn't howl') and a negated end-state ('the dog missed it's howling target'). Presumably this is because the end of the event is located on the Relational Noun in (29a) (MacDonald 2006). In contrast, in (29b), only the counterfactual reading is available. Under the account proposed here, this is because the end of the event is a function of the interaction between the object and *v*, and so is not an adequate target for modification. The start of the event, though, merges as normal, and so can be targeted by *laj*.

Thus, we can account for the telicity restriction with the Dative Alternation and the Psych-verbs: it is a consequence of an interaction between the object and the event structure. However, we are not left with the puzzle of what *-isa* is actually doing in the structure. If it's not a causative, and doesn't introduce a specified  $\theta$ -role, then what is its purpose?

<sup>20</sup>There are other restrictions as well, including something like an animacy hierarchy restriction. Furthermore, while I claim that this is a definiteness effect, in actuality, it may be specificity rather than definiteness. I leave these issues for further research.

Following Kratzer (1996) and much subsequent work, we might call *-isa* the realization of Voice, which introduces an external argument. This is acceptable so long as we bleach the semantics of Voice to allow any type of  $\theta$ -role, not just Agents, Causers, but even Instruments and Experiencers. Given this general acceptance of any  $\theta$ -role, I think it's more appropriate to call this an Applicative merged above the verbal domain (Schäfer 2008; Kim 2011; Alexiadou et al. 2015). Appl gets spelled-out as null in most cases, but given the precise syntactic conditions, i.e., telicity and Internal Causation, the spell-out of Appl is *-isa*.

To summarize the analysis, *-isa* is not a “causative” morpheme. Rather, it appears to introduce an external argument when a specific syntactic/semantic configuration is achieved. Namely, when the semantics of the verb are those of Internal Causation, and also when *v* bears something like a [+telic] feature. The latter requirement can be the result of the inherent boundedness of the event, or from an interaction with event structure and a definite object. In either case, *-isa* is the result of deterministic properties of the syntax/semantics.

## 7 Discussion

Can we reduce (21) to a more specific syntactic configuration? In particular, could we say that *-isa* appears to introduce the external argument whenever *v* contains a specifier? This is a tempting alternative, as we could adopt the arguments in Levin and Rappaport-Hovav (1995), who claim that Internally Caused verbs are actually unergative. Under such an assumption, we might plausibly merge the subjects of the intransitive verbs in Table 1 in spec-*vP* (as opposed to comp-VP for Table 2). Thus, we could reduce the descriptive generalization to “*-isa* spells out the head that introduces the external argument whenever spec-*vP* is filled”. This proposal would actually make the morphological operation here fall more in line with Embick (2004)'s proposal for Greek. He argues that non-active verbal morphology appears whenever there is “unaccusative syntax”, which for him is whenever spec-*vP* is empty. Thus, K'iche' could be argued to be the converse of Greek, in that a special morphological form is required only when spec-*vP* is occupied.

The difficulty here would be to keep the system from over-generating. We would have to explain why definite objects of the verbs in Table 2 don't trigger *-isa*. That is, we would have to stipulate that these objects don't pass through spec-*vP* on their way out of the verb phrase. We would be trading one stipulation concerning a feature like [+Internal Causation] with a stipulation concerning object movement. This is partly an empirical concern, but it may also just be one of theoretical preference.

Still, there are reasons to believe that (21) is an oversimplification, particularly with respect to Internal Causation. There is one last use of *-isa* that appears to undermine the need for an Internally Caused root. Attaching *-isa* to some verbs yields an Iterative reading, that it is, a sequence of repeated events. A non-exhaustive list is given in Table 5, and an example is given in (30).

- (30) a.   xuq'at la kexu  
           x- $\emptyset$ -u-q'at           la   kexu  
           CMP-3sgB-3sgA-cut DET cheese  
           ‘He cut the cheese’

non-iterative		iterative	
<i>kach'</i>	'bite'	<i>kach'isa</i>	'bite repeatedly'
<i>ch'ey</i>	'hit'	<i>ch'eyisa</i>	'hit repeatedly'
<i>pax</i>	'break'	<i>paxisa</i>	'break repeatedly'
<i>q'at</i>	'cut'	<i>q'atisa</i>	'cut repeatedly'
<i>pach'</i>	'squash'	<i>pach'isa</i>	'squash repeatedly'
...		...	

Table 5: Verbs that get an iterative reading with *-isa*

- b. xuq'atisaj la kexu  
 x-Ø-u-q'at-isa-j                      la    kexu  
 CMP-3sgB-3sgA-cut-ISA-SM DET cheese  
 'He cut the cheese many times'

The telicity requirement is clearly satisfied by the types of predicates here. However, it is less clear how the Internal Causation requirement is satisfied. If we could find a structural connection between iterativity and Internal Causation, then an overall structural analysis might be preferable over a [+Internal Causation] feature, suggested above. It is not obvious to me that such a connection exists, though, and so further work on the syntax and semantics of iterativity will be needed to decide if this is the right solution. Furthermore, it is not clear to me how productive the iterative use of *-isa* is. Iterative uses always appear to compete with a reduplicated form of the verb, which is generally judged as “better” (i.e., prescriptively more correct K'iche') than the *-isa* form. So speakers prefer (30b) with the verb form *xuq'atatej*, 'he cut (repeatedly)', although will readily accept and offer (30b) as an alternative “slang” use. An investigation into the historical development of causativity in Mayan, and the uses of the cognate causative marker in related Mayan languages should be informative towards this point.

Nonetheless, I have provided here a unified analysis of three disparate uses of the morpheme *-isa* in K'iche'. Empirically, it seems clear that *-isa* cannot be purely a causative morpheme: it does not always have causative semantics. Such “non-causative causatives” have been noted (Aikhenvald 2011), but an analysis that can capture such uses is not trivially implemented. I have suggested here that the appearance of *-isa* is determined as a function of the syntax. Specifically, *-isa* appears whenever the verb is Internally Caused and the event is telic. If such an analysis is on the right track, then other appearances of non-causative causatives might be given a similar syntactico-semantic analysis.

- Aikhenvald, A. Y. (2011). Causatives which do not cause: non-valency increasing effects of valency-increasing derivation. In Aikhenvald, A. Y. and Dixon, R. M. W., editors, *Language at Large: Essays on Syntax and Semantics*, pages 86–142. Brill.
- Alexiadou, A. and Anagnostopoulou, E. (2006). From Hierarchies to Features: person splits and direct-inverse alternations. In Boeckx, C., editor, *Agreement Systems*. John Benjamins.
- Alexiadou, A., Anagnostopoulou, E., and Schafer, F. (2006). The properties of anticausatives crosslinguistically. In Frascarelli, M., editor, *Phases of Interpretation*, volume 91, pages 187–212. Mouton.
- Alexiadou, A., Anagnostopoulou, E., and Schafer, F. (2015). *External Arguments in Transitivity Alternations: A layering approach*. Oxford University Press, (pre-publication version).
- Alexiadou, A. and Schäfer, F. (2006). Instrument subject are agents or causers. In Baumer, D., Montero, D., and Scanlon, D., editors, *Proceedings of WCCFL 25*, pages 40–48.
- Belletti, A. and Rizzi, L. (1988). Psych Verbs and  $\theta$ -theory. *Natural Language & Linguistics Theory*, 6:291–352.
- Borer, H. (2005). *The Normal Course of Events*, volume (Volume II). Oxford University Press.
- Campbell, L. (2000). Valency-changing Derivations in K’iche’. In Dixon, R. M. W. and Aikhenvald, A. Y., editors, *Changing Valency: Case studies in transitivity*, chapter 7, pages 236–281. Cambridge University Press.
- Coon, J. (2010). *Complementation in Chol (Mayan): A theory of split ergativity*. PhD thesis, Massachusetts Institute of Technology.
- Embick, D. (2004). Unaccusative Syntax and Verbal Alternations. In Alexiadou, A., Anagnostopoulou, E., and Everaert, M., editors, *The Unaccusativity Puzzle*. Oxford University Press.
- Fábregas, A. and Varela, S. (2006). Verbs classes with eventive infinitives in spanish. In Sagarra, N. and Toribio, A. J., editors, *Selected Proceedings of the 9th Hispanic Linguistics Symposium*, pages 24–33, Somerville, MA. Cascadilla Proceedings Project.
- Folli, R. (2002). *Constructing telicity in English and Italian*. PhD thesis, University of Oxford.
- Folli, R. and Harley, H. (2007). Teleology and animacy in external arguments. *Lingua*, 118(2):190–202.
- Haspelmath, M. (1993). More on the typology of inchoative/causative verb alternations. In Comrie, B. and Polinsky, M., editors, *Causatives and Transitivity*. John Benjamins.
- Henderson, R. (2012). Morphological alternations at the intonational phrase edge. *Natural Language & Linguistics Theory*, 30:741–787.
- Kim, K. (2011). *External Argument Introducers*. PhD thesis, University of Toronto.
- Kratzer, A. (1996). Severing the External Argument from its Verb. In Rooryck, J. and Zaring, L., editors, *Phrase Structure and the Lexicon*, Studies in Natural Language and Linguistic Theory, pages 109–138. Kluwer.