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On the incompatibility of object fronting and progressive aspect in Yucatec Maya

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In this paper, we present data from an elicitation study and a corpus study that support the observation that the Yucatec Maya progressive aspect auxiliary *táan* is replaced by the habitual auxiliary *k* in sentences with contrastively focused fronted objects. Focus has been extensively studied in Yucatec, yet the incompatibility of object fronting and progressive aspect in Yucatec Maya remains understudied. Both our experimental results and our corpus study point in the direction that this incompatibility may very well be categorical. Theoretically, we take a progressive reading to be derived from an imperfectivity operator in combination with a singular operator, and we propose that this singular operator implicates the negation of event plurality, leading to an exhaustive interpretation which ranks below corrective focus on a contrastive focus scale. This means that, in a sentence with object focus fronting, the use of the marked auxiliary *táan* (as opposed to the more general *k*) would trigger two contrastive foci, which would be an unlikely and probably dispreferred speech act.

KEYWORDS

fronting, progressive, Yucatec Maya, habitual, focus

1 Introduction

In this paper, we present and account for data from an elicitation study and a corpus study that support the observation that the Yucatec Maya progressive aspect morpheme *táan* is replaced by the imperfective morpheme *k* in sentences with fronted objects (Bohnemeyer, 2002, p. 265). We suggest that this restriction is the result of a focal component in the meaning of the progressive marker that leads to the exclusion of event plurality. Yucatec Maya (YM), a head-marking Mayan language mainly spoken in south-east Mexico and in parts of Belize (iso code: yua), is traditionally considered a VOS language (but see Gutiérrez-Bravo and Monforte, 2010 for a different view) with robust constituent fronting to the left of the finite verb for the purpose of focusing (1a.–c.).¹

- (1) a. [FOC *Leti*'] *kíin-s-ej-ø*.
3.SG die.AF-CAUS-PRF-ABS.3SG
“HE killed him.” (MDG-B: 26)
(Gutiérrez-Bravo, 2017, p. 6)

¹All Yucatec examples are presented according to the 1984 orthographic conventions of the *Comisión de Difusión del Alfabeto Maya* of the *Academia de la Lengua Maya de Yucatán* (CDAM, 1984) and do not necessarily reflect their phonetic form accurately. In this orthographical system, symbols have their expected values except for *ch*=[tʃ], *j*=[h], *x*=[ʃ], and *'*=[ʔ]. The abbreviations used in the examples are the following: ABS: absolutive, AF: agent focus, CAUS: causative, CL: clitic, CP: completive, EP: epenthesis, ERG: ergative, FOC: focus (adverb), HAB: habitual, IND: indicative, NEG: negation, NFP: non-finite passive, PART: participle, PASS: passive, PL: plural, PREP: preposition, PRF: perfect, PRG: progressive, SG: singular, TOP: topic, TR: transitive, TRM: terminative. The glosses ERG and ABS correspond to what is known in traditional Mayan linguistics as the *A* and *B* pronominal series.

- b. *Tumen to'on=e'* [FOC *maaya*] *k*
 because 1.PL-TOP Maya HAB.ERG.1.PL
t'an-ik-ø.
 speak-IND-ABS.3SG
 "Because we, we speak MAYA." (MTK: 63)
 (Gutiérrez-Bravo, 2017, p. 12)
- c. *Pero ma'* [FOC *ti'* *tuláakal*] *k=u*
 but NEG PREP all HAB=ERG.3
ts'a'ab-al=i'.
 give.PASS-IND-CL
 "But it is not granted TO EVERYONE." (MDG-B: 62)
 (Gutiérrez-Bravo, 2015a, p. 21)

Additionally, Yucatec has a particular verb focus construction. In this construction a nonfinite form of the verb occupies the same left peripheral position as other kinds of foci. Furthermore, a dummy verb *beet* "do" functions as the finite (main) verb of the clause, a syntactic process that is not observed elsewhere in the syntax of Yucatec Maya (2.a., b.).

- (2) a. *Okol-bil u beet-ik-ø*
 steal-NFP ERG.3 do-IND-ABS.3SG
wal=e'.
 perhaps=CL
 "Maybe he used to STEAL it."
 (Gutiérrez-Bravo, 2015a, p. 23)
- b. *Bin k=u beet-ik-ø*.
 go HAB=ERG.3 do-IND-ABS.3.SG
 "What he used to do was to GO (away)."
 (Gutiérrez-Bravo, 2015a, p. 25)

Thus, like other Mayan languages, Yucatec consistently shows movement of a focused constituent to the left edge of the clause. However, based on data from a recent elicitation study of object focus constructions with 10 Yucatec speakers from Quintana Roo, Mexico, we will show in what follows that there seems to exist a restriction on focus structures in Yucatec Maya, such that focus fronting is incompatible with the progressive aspect, which is marked with the auxiliary *táan*. Some examples of this auxiliary are presented in (3).²

- (3) a. *Táan k meyaj...*
 PRG ERG.1SG work
 "We were working." (MTK: 106)
- b. *Táan in w-il-ik-ø*.
 PRG ERG.1SG EP-SEE-IND-ABS.3.SG
 "I'm seeing it." (MTK: 85)

Yucatec Maya has a considerable number of aspect and mood auxiliaries and there is nothing in the morpho-syntactic or syntactic properties of *táan* that make it different from any of the other auxiliaries in this language (see Bricker et al., 1998; Bohnermeyer, 2002, for instance). As can be seen in the examples in (3) and (4a.), for example, it has the same distribution as any other auxiliary, i.e., immediately to the left of the ergative

clitic that cross-references the subject. Our results, however, show that it is very different from other auxiliaries with respect to focus fronting.

Focus fronting has been extensively studied in Yucatec (to the point where it is probably the syntactic phenomenon most studied in this language: Tonhauser, 2003; Lehmann, 2008; Gutiérrez-Bravo and Monforte, 2011; Skopeteas and Verhoeven, 2012; Gutiérrez-Bravo, 2015a,b; Verhoeven and Skopeteas, 2015, *inter alia*), yet this particular restriction has gone mostly unnoticed. One exception is Bohnermeyer (2002, p. 265), where it is observed that the habitual auxiliary (referred to as imperfective by this author and others) tends to replace the progressive in all focus constructions. As we show in detail in what follows, our data corroborates this statement for fronted objects to the point that we did not find a single example of *táan* co-occurring with fronted objects, neither in our elicitation study nor in our corpus study (see 4a. vs. b.),³ whereas we found a fairly high number of object fronting with the bound habitual auxiliary *k* and other aspect and mood auxiliaries in our data (see 5a.–c. and Section 3.2).

- (4) a. *Tun man-ik-ø kib (le*
 PRG.ERG.3 buy-IND-ABS.3.SG candle DET
ko'olel=o')
 woman=CL
 "The woman is buying candles."
- b. **kib tun man-ik-ø*
 candle PRG.ERG.3 buy-IND-ABS.3.SG
(le ko'olel=o')
 DET woman=CL
 (Target meaning: "The woman is buying CANDLES.")
- (5) a. *kib k=u*
 candle HAB=ERG.3
man-ik-ø le
 buy-IND-ABS.3.SG DET
ko'olel=o' (ASP = habitual)
 woman=CL
 "The woman buys CANDLES."
- b. *siete in paalal ts'o'ok in*
 seven my children TRM ERG.1.SG
nuukkíin-s-ik-ø. (ASP = terminative)
 bring.up-CAUS-IND-ABS.3.SG
 "I have already brought up SEVEN CHILDREN (of mine)" (MDG-B: 32)

2 This auxiliary has a number of portmanteau allomorphs which incorporate the ergative pronominal clitics, i.e. *túun/tun* for third person [as in (4)], *tíin/tin* for first person singular, etc. See for instance Bohnermeyer (2002: 103).

3 The asterisk (*) in (4b) is, so far, supposed to reflect the non-existence of the PROG marker with fronted objects in our data. Since our studies did not produce negative evidence, future experiments will need to test whether this restriction is as categorical as suggested by our data. We thank an anonymous reviewer for stressing this point. As will be discussed in more detail in Section 4, note that, although limited in their scope, our clear-cut results do still point to the possibility that the incompatibility between focus fronting and progressive aspect may very well be categorical, whereas there is no hint whatsoever in our data that would motivate us to pursue the opposite hypothesis.

- c. *Chéen u tsíimin t=u*
 only his horse CP=ERG.3
bi-s-aj-ø. (ASP = completive)
 go-CAUS-PRF-ABS.3SG
 “He brought along only HIS HORSE.” (MTK: 85)

As will be detailed in Section 4, we develop an analysis of these facts that argues for a focal meaning component for *táan* that interacts with the focal meaning of object fronting to render their combination unlikely and probably unacceptable in most, if not all contexts. Our account is based on the semantics of habitual and progressive according to [Ferreira \(2016\)](#) and the idea of scalar implicature as a focus related effect according to [Rooth \(1992\)](#). The outline of the rest of paper is as follows. In Section 2, we provide a brief description of focus in Yucatec, with the aim to establish the necessary conditions to identify syntactic focus constructions in this language. Afterwards, we present our two data sets and the main results of the corresponding word order analyses (Section 3). We then elaborate our semantic framework to account for the above-mentioned effects in terms of mereological semantics and scalar implicatures (Section 4), and we discuss the implications and possible short-comings of our account (Section 5). Finally, Section 6 summarizes our main findings and conclusions.

2 Focus in Yucatec Maya

In Yucatec Maya, contrastively⁴ focused constituents are placed immediately to the left of the auxiliary or verb, as in many other Mayan languages. In (6) and (7), a contrastively focused intransitive subject is fronted.

- (6) [FOC *Teech*] *a w-ojel.*
 2.SG ERG.2 EP-know
 “YOU will know.” (MDG-B: 136)
- (7) [FOC *Leti*] *k=u y-awat.*
 3.SG HAB=ERG.3 EP-scream
 “HE is the one who screams.” (MDG-B: 65)

In example (8), the direct object is focused. As mentioned above, this also brings with it object fronting, since the unmarked order between verb and object in Yucatec is VO. This example furthermore shows an important property of the preverbal field in Yucatec, namely, that this language has a specific topic position to the left of the position occupied by the focused constituent. As in many other Mayan languages, these two positions show different syntactic and prosodic properties, with a high tonal target at the edge of the focused constituent as one cue for the prosodic break between the topic and the focus position (see [Verhoeven and Skopeteas, 2015](#)).

- (8) *Tumen to'on=e'* [FOC *maaya*] *k*
 because 1.PL=TOP maya HAB.ERG.1.PL
t'an-ik-ø.
 speak-IND-ABS.3SG
 “Because we, we speak MAYA.” (GRISELDA, p. 1)

The focused constituent can be preceded immediately by a negation, as in example (9). In contrast, topics always appear to the left of the negation. This means that the difference between the relative ordering of topics and foci with respect to negation is also a diagnostic and can be used to distinguish them.

- (9) *To'on=e', ma'* [FOC *leti*']
 1PL=TOP NEG 3SG
kaan-s-a'an-ø to'on=i'.
 learn-CAUS-PART-ABS.3SG 1PL=CL
 “It was not THAT that was taught to us.” (MDG-B:266)

Many Mayan languages show a verb form that is different from the canonical verb form when the transitive subject is focused. In the literature on Mayan languages, this distinct verbal form is known as the agent focus form of the verb. Yucatec is one of the Mayan languages that show this phenomenon. Agent focus constructions are different from most other canonical transitive matrix constructions in the language in that they do not show any kind of auxiliary. The ergative proclitic that agrees with the subject/agent is also absent, and so the subject/agent instead has to be realized as a pronoun or a full noun phrase ([Bricker, 1979](#); [Tonhauser, 2003](#)). The mood morphology of the agent focus construction is also different from that observed in canonical transitive clauses. For the indicative mode, the suffix *-ik* in (8) is also used. Perfective constructions, however, do not show the suffix *-aj*, but instead show the suffix *-ej*, which in canonical transitive clauses corresponds to the irrealis mode. These properties are illustrated in the examples (10) and (11).

- (10) [FOC *Leti*] *kíin-s-ik-ech=o'.*
 3.SG die.AF-CAUS-IND-ABS.2SG=CL
 “THAT’S what kills you.” (MDG-B:50)
- (11) [FOC *Leti*] *kíin-s-ej-ø.*
 3.SG die.AF-CAUS-PRF-ABS.3SG
 “HE killed him.” (MDG-B:26)

The best way to describe the agent focus form of the verb in Yucatec Maya is that it constitutes a transitive predicate (which is shown by the specific allomorphs of the mood suffixes of these constructions) that agrees with the object as any other transitive predicate of the language, but in which the bound subject morpheme is absent (the ergative proclitic which is characteristically in cross-reference with the transitive subject). The agent focus form is typically observed when the subject of a transitive clause is focused, but also in transitive subject interrogative and relative clauses.

Finally, focus in Yucatec Maya is subject to a restriction that disallows fronted foci to be nominal expressions introduced by a definite determiner or a demonstrative. This restriction is observed in many other Mayan languages ([Aissen, 1992](#)) and is argued in [Verhoeven and Skopeteas \(2015\)](#) to be the result of the interaction between prosodic and syntactic considerations. Example (12) illustrates this restriction. Observe that since the verb shows the agent focus form discussed above, we can be certain that the preverbal subject/agent is a focus and

⁴ See Section 3.1 and Section 4 for a discussion of the different kinds of contrastive focus (corrective, selective, exhaustive, etc.).

not a potentially unmarked subject or some other kind of fronted constituent.

- (12) **Le aj koonol=o' jann-t-ø*
 DET M seller=CL eat.AF-TR-ABS.3SG
oon.
 avocado
 “The seller ate the avocado.” Verhoeven and Skopeteas
 (2015, p. 16)

In short, fronted foci can be unequivocally identified in Yucatec given the robust set of distributional and morphosyntactic properties characteristic of focus in this language.

3 Object fronting and aspect marking in Yucatec Maya

In this section, we present the main word order regularities found in two data sets: a set of 451 VO/OV(S) sentences stemming from a production study conducted in 2017 with 10 Yucatec speakers from Quintana Roo (Section 3.1), and a set of 42 declarative main clauses with fronted direct objects stemming from the 30,000 word long compilation of oral narratives in Yucatec *Maayáaj tsikbalilo'ob Kaampech* (*Narraciones Mayas de Campeche*, Section 3.2) (Can Canul and Gutiérrez-Bravo, 2016).

3.1 Production study

The elicited data stems from a production study carried out in 2017 with 10 monolingual or Maya-dominant speakers (all female, age range 42–70, mean age 51.9, median age 54) of Yucatec in Yaxley and Tihosuco, Quintana Roo, Mexico. A fieldwork collaborator (bilingual speaker of Yucatec and Yucatecan Spanish) conducted the study in Yucatec and also gave oral instructions to participants that do not read Yucatec. All participants were paid for their participation and gave their informed consent. An AKG C 544L head-mounted microphone connected to a Presonus Audiobox USB was used for recording. Participants were shown a slide presentation in pseudo-randomized order (see [Supplementary material](#)) intended to elicit broad (non-corrective) or contrastive-corrective responses with focus on the direct object. First, participants were shown an example and they were given several suggestions about possible ways to answer. They were then instructed to give only full sentence answers, and to answer in a way that felt natural to them; they were also told that there were no incorrect answers. They were shown two trial examples. Finally, they proceeded to answer the 48 questions of the task proper. The questions for the participants were matched with pictures and accompanying lexical material in order to obtain utterances with three constituents: a subject constituent, an object constituent, and a constituent containing the verb with its tense-mood-aspect (TMA) markers. [Figure 1](#) shows an example of the elicitation of an answer without a correction. The design was $4 \times 3 \times 2 \times 2$, combining four lexicalizations of object constituents with different vowel types (for reasons of prosodic analyses) with three different noun phrases (bare, one modifier, two modifiers),

two focus conditions (non-corrective/corrective), and two vowels (a, i). The non-corrective focus conditions were originally intended to be broad focus cases, but the structure and materials of the elicitation procedure led to contrastive-selective foci.⁵ In the non-corrective conditions, participants were asked “What happens?” (*Ba'ax ku yúuchul?*). A possible answer would be “The woman (*le ko'olelo*) is buying (*ku manik*) a lot of honey (*ya'ab kaab*)”. In the contrastive-corrective focus condition, participants would respond to a biased question such as “The woman is buying many avocados, right?”. A way to respond to this would have been “No, the woman is buying a lot of honey”. The subject constituent was always *le ko'olelo* “the woman”, whereas the VP was either *ku jokik* “HAB-ERG.3 uproot” (with the object *xiiw* “grass”) or *ku manik* “HAB-ERG.3 buy” (with all other objects). The objects were: *báat* “ax(es)”, *bak* “meat”, *iib* “beans”, *kaab* “honey”, *kib* “candle(s)”, and *xiiw* “grass”. These were either used in isolation or combined with adjectives (*nukuch* “big”, *chak* “red”, *sak* “white”) or quantifiers (*jach* “very”, *ya'ab* “much”).

The main result is that the 10 Yucatec speakers did not produce a single progressive sentence with a fronted object in either of the two conditions, even though we found abundant instances of each of the two features individually, that is, object fronting ($N = 256$) and progressive marking ($N = 161$), to the degree that the object is predominantly and regularly fronted in habitual sentences. [Table 1](#), [Figure 2](#) show the number of progressive and habitual sentences by word order (VO/OV) for each focus category (Broad/Contrastive): we see that object fronting does not occur in combination with the progressive aspect auxiliary, irrespective of whether the fronting happens to express corrective focus or non-corrective (probably contrastive-selective) focus. In contrast, object fronting occurs predominantly with the HAB marker in the elicited data (see again [Table 1](#), [Figure 2](#)), suggesting that the speakers apparently replace PROG with HAB whenever they intend to focalize the object constituent. Thus, corroborating the observation by [Bohnenmeyer](#) (2002, p. 265), our data neatly suggest that there is a strong incompatibility between fronted objects and the progressive (PROG) in Yucatec Maya, which might even be categorical in this language.⁶

3.2 Corpus study

Given the low variability in lexical material included the elicitation study and the very low variability of aspect auxiliaries

⁵ By contrastive-selective, we mean non-exhaustive selection from an open set, or [+identificational] [-contrastive] focus in the sense of [Kiss](#) (1998). Given that the object constituents changed while the verbs remained constant, the broad focus condition still included a contrast between changing nouns in the context of identical actions. The broad focus results might therefore not be fully representative for “out-of-the-blue” sentences, if these can occur in this kind of experiments at all to begin with.

⁶ See footnote 3, and again Section 4, on the question of the (non-)categorical status of this phenomenon. The alternation between OV and VO in the HAB category might be due to the elicitation method, or to some eventual word order flexibility in Yucatec ([Verhoeven and Skopeteas](#), 2015) and will not be fully explored here.

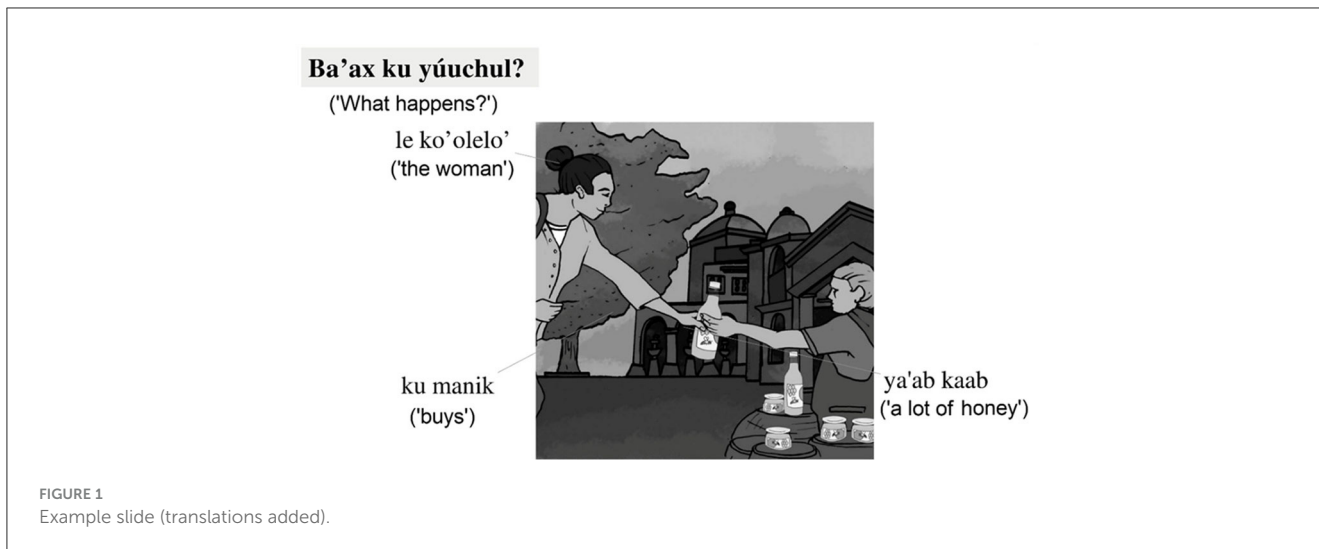


TABLE 1 Progressive and habitual sentences by word order and focus type.

	Broad		Contrastive		Total
	HAB	PROG	HAB	PROG	
VO	22	104	12	57	195
OV	94	0	162	0	256
Total	116	104	174	57	451

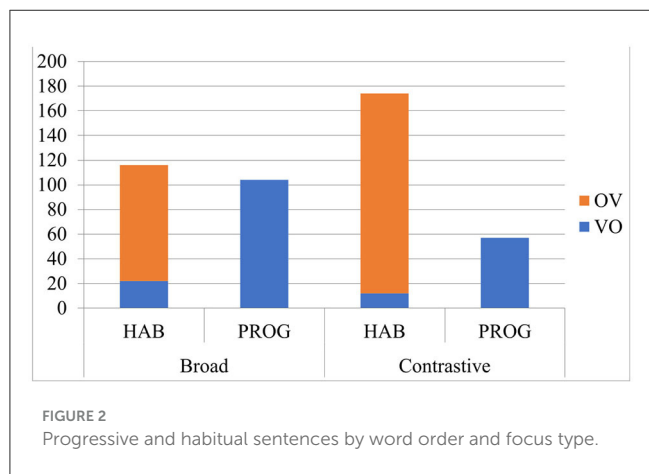


FIGURE 2 Progressive and habitual sentences by word order and focus type.

(only HAB and PROG), we decided to carry out a *post-hoc* corpus study in order to find out if the presumed restriction (no PROG with fronted objects) extends to other types of speech data (i.e., spontaneous speech in oral narratives) and if, apart from the habitual marker, there are other TAM markers (e.g., completive, terminative, present perfect, etc.) that can co-occur with fronted objects.

For this purpose, we extracted all clauses with focus fronting of the direct object that appear in the book *Maayáaj tsikbalilo'ob Kaampech* (Can Canul and Gutiérrez-Bravo, 2016), a compilation of oral narratives in Mayan, 30,012 words in total. We found a total of 42 clauses with fronted focused direct objects: no tokens were found with progressive aspect. The different aspect auxiliaries

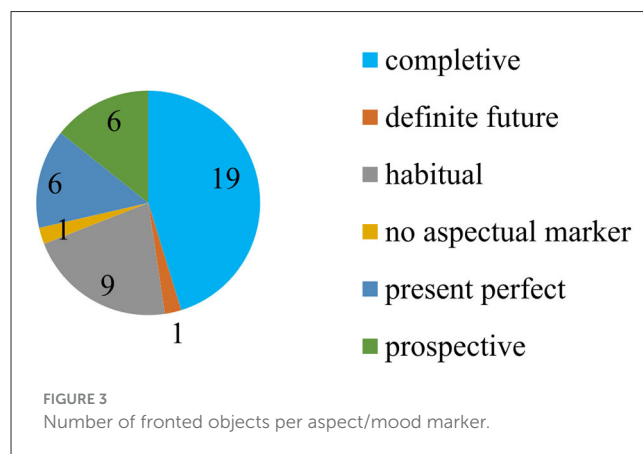


FIGURE 3 Number of fronted objects per aspect/mood marker.

that these focus constructions appeared with are represented in Figure 3.

An additional effect that further supports our observations is the fact that the HAB auxiliary *k* is incompatible with negation, and they never appear together, a well-known fact about Yucatec: instead the progressive is used in this context. However, the prohibition on co-occurrence of the progressive with focus fronting is so strong that it even overcomes this incompatibility. Consider the example in (13).

- (13) *Ma' t=u yutstal u*
 NEG PROG=ERG.2 be.possible ERG.3
y-ok-ol máak=e'.
 EP-enter-IND person=CL
 "It is not possible to go in there." (MTK: 18)
 ("Lit. It is not being possible for a person to enter.")

The text example above refers to a cave that is inaccessible because it is too deep and dangerous. This characteristic of the cave, of course, is a permanent characteristic and consequently one would expect the habitual auxiliary to be used here. However, since the sentential negation and the habitual auxiliary cannot be used together, the progressive auxiliary is used instead. One crucial exception is when a fronted focus or a focus particle (i.e., *chéen*,

“only”) is negated: in this case the co-occurrence of the negation and the habitual auxiliary *is* possible (14).

- (14) *Pero ma'* [FOC *ti'* *tuláakal*] *k=u*
 but NEG PREP all HAB=ERG.3
ts'áab-al=i'.
 give.PASS-IND=CL
 “But they are not given to ALL (people).” (MDG-B: 62)

At first glance, we might interpret the scope of the pre-focal negation as limited to the fronted constituent (Gutiérrez-Bravo, 2015b; Gutiérrez-Bravo et al., 2019). The presence of the clitic =i', however, indicates that, semantically at least, we are still dealing with a case of sentential negation, rendering this observation even more pertinent because it constitutes an exception to the rule that the auxiliary *k* is incompatible with negation. One way to explain this exception is by means of two conflicting constraints, with the restriction on focus fronting together with progressive marking winning over the restriction on negation together with habitual marking. Summing up, what appears to be happening is something along the following lines:

A. The presence of a negation particle with scope over the entire proposition does not allow the presence of the habitual auxiliary, i.e., (13).

B. In case of negated fronted foci, using the progressive would result in a fronted focus construction with progressive aspect, which is also disallowed (Figures 2, 3).

C. Restriction B is stronger and overrides the effects of Restriction A, so in this one single case, negation is allowed in a clause with habitual aspect, i.e., (14).

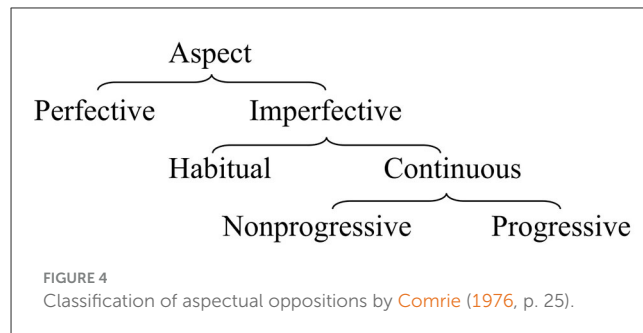
In other words, the prohibition on co-occurrence of the progressive with focus fronting is so strong that it even overcomes a different prohibition, the prohibition on negation plus habitual. This supports our proposal that the progressive is truly disfavored with focus fronting.

Summarizing our main empirical results, we did not obtain a single token of object focus with OV word order co-occurring with the progressive aspectual marker, neither in the production study nor in the compilation of narratives *Maayáaj tsikbalilo'ob Kaampech*. Lastly, we found that there exists a highly unusual construction where the habitual *k* auxiliary co-occurs with the negation particle *ma'*, although the co-occurrence of these two elements is normally banned in Yucatec Maya.

4 Analysis: focus on a singular unbounded event with *táan*

As discussed above, our data suggest that there is a clear-cut incompatibility between object fronting for purposes of focalization and the progressive aspect auxiliary in Yucatec. Our account of this restriction is based on (a) the mereological semantics of habitual and progressive according to Ferreira (2016), and (b) the idea of scalar implicature as a focus related effect according to Rooth (1992).

The habitual auxiliary *k* and the progressive auxiliary *táan* are similar in that both present the event described by the co-occurring verb from an imperfective perspective, meaning they “select an internal part of the target event for inclusion in [the time-reference of the assertion], but no initial or terminal part”



(Bohnenmeyer, 2002, p. 41–42; Smith, 1997). This has been noted in a number of works on the Yucatec TAM-system (Bohnenmeyer, 2002; Vinogradov, 2013; Lehmann, 2017), and it is not an aspectual property specific to Yucatec. Rather, it follows the “most typical subdivisions of imperfectivity” according to Comrie (1976, p. 25) in which the habitual and the progressive are both part of the category of ‘imperfective aspect’ (see Figure 4). Note that such a classification indicates that the imperfective is a more general, overarching category than the progressive and the habitual.

This classification has frequently been adopted and developed further in the formal semantic literature on aspectual categories and event semantics (e.g., Boneh and Jędrzejowski, 2019, pp. 3–5 and references cited therein). According to Ferreira (2016), both progressive and habitual readings are derived from a single imperfectivity operator (*Imp*) that introduces temporal inclusion. Formally (15) states that for any event (description) *e*, the running time of the event $\tau(e)$ is semantically included in the reference (time) interval *i* (Ferreira, 2016, p. 361–362).

$$(15) \text{ Imp} = \lambda P. \lambda i. \exists e: i \subseteq \tau(e) \ \& \ P(e)$$

Such a general semantics for imperfectivity is useful for the analysis of the *k* auxiliary because it is generally considered to be highly grammaticalized and semantically nearly vacuous. Lehmann (2017, p. 203) for example states that today the “auxiliary only survives in its one-phoneme form *k*, obligatorily univerbates with the Set A index and carries aspectual information only in contrast with more specific auxiliaries”. In other words, it seems to have undergone semantic bleaching (Sweetser, 1988) and can alternate between a more general, imperfective reading and a more specific, habitual reading, depending on the context. Generalizing sense-shifts from progressives or habituals to imperfect-markers are in fact a frequent cross-linguistic case of semantic bleaching (Bybee et al., 1985; Sweetser, 1988, p. 390).

Now, according to Ferreira (2016), a progressive or a habitual reading arises from the combination between the *Imp* operator and either a singular operator (*sg*) (16) or a plural (*pl*) operator (17). According to (16), there is no event that is a proper subpart of *e*, whereas according to (17), the “*pl* operator takes a set *P* and extracts the homogeneous sums in *P*. These are the sums that can be partitioned into non-overlapping proper parts that are also in *P*” (Ferreira, 2016, p. 358).

$$(16) \text{ sg} = \lambda P. \lambda e. \min(e, P) \\ \min(e, P) \iff P(e) \ \& \ \neg \exists e' < e: P(e')$$

$$\begin{aligned}
 (17) \quad & pl = \lambda P. \lambda e. \text{sum}(e, P) \\
 & \text{sum}(e, P) \iff P(e) \ \& \ \exists e_1, e_2, \dots, e_n < e : \\
 & P(e_1) \ \& \ P(e_2) \ \& \ \dots \ \& \ P(e_n) \ \& \\
 & \otimes (e_1, e_2, \dots, e_n) \ \& \ e = e_1 \oplus e_2 \oplus \dots \oplus e_n \\
 & \hspace{10em} (\text{Ferreira, 2016, p. 357–358})
 \end{aligned}$$

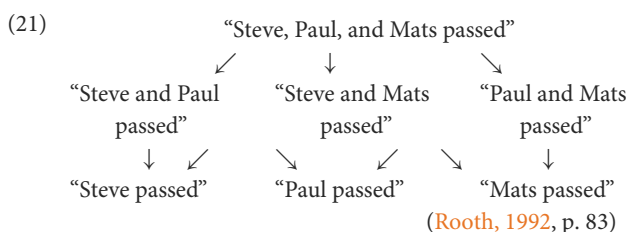
When the imperfective operator *Imp* combines with the singular operator ($\text{Imp} \circ \text{SG}$, via function composition), we obtain the progressive reading (18). When it combines with the plural operator ($\text{Imp} \circ \text{PL}$), we obtain the habitual reading (19) (Ferreira, 2016, p. 362).

$$\begin{aligned}
 (18) \quad & \llbracket \text{Imp}_{\text{sg}} \rrbracket = \text{Imp} \circ \text{SG} = \lambda P. \text{Imp}(\text{SG}(P)) \\
 & \text{Imp}_{\text{sg}} = \lambda P. \lambda i. \exists e : i \subseteq \tau(e) \ \& \ \mathbf{min}(e, P) \\
 (19) \quad & \llbracket \text{Imp}_{\text{pl}} \rrbracket = \text{Imp} \circ \text{PL} = \lambda P. \text{Imp}(\text{PL}(P)) \\
 & \text{Imp}_{\text{pl}} = \lambda P. \lambda i. \exists e : i \subseteq \tau(e) \ \& \ \mathbf{sum}(e, P) \\
 & \hspace{10em} (\text{Ferreira, 2016, p. 362})
 \end{aligned}$$

This means that progressive event descriptions refer to *singular* events ongoing at and beyond the reference (time) interval *i*, whereas habitual event descriptions refer to ongoing *sequences* of events that are expected to continue, since the scope of the operator is shifted from the level of one individual event to the level of a number of (recurring) events (Ferreira, 2016, p. 356–357).

Ferreira’s account follows Comrie’s hierarchy in that progressive and habitual readings are more specific than imperfective readings. As stated above, this is important for the alternation between Yucatec *táan* and *k* because *k* seems to have undergone semantic bleaching and can denote either just temporal inclusion (*Imp*) or combine it with event plurality (*Imp_{pl}*). If we assume that *táan* denotes *Imp_{sg}* and we accept that there is a partial order on sets of events such that asserting the plural occurrence of an event implies a singular occurrence, but not vice versa, we expect *táan* to trigger a scalar implicature in the sense of Rooth (1992). Rooth (1992) shows that, given a set *C* and a partial order \geq_C on *C*, we obtain a pattern in which “asserting an element ϕ of *C* implicates the negation of any higher element of the scale” (Rooth, 1992, p. 82–83). This pattern is illustrated with the example (20) and with the partially ordered set of assertions in (21).

- (20) a. George: How did the test go?
 b. Mats: Well, [I]_F passed.



To describe the effects of this partial order, we need to include groups in the domain of individuals (together with the group sum operation \oplus) and assume that the property *pass* is true of a group *g* exactly if *pass* is true of the atomic parts of *g*. This leaves us with the notation in (22) for *C*. Based on these assumptions, Rooth (1992, p. 83) argues that the assertion “Mats passed” implicates the negation of “Mats and Paul passed”, which in turn implicates that Paul did not pass.

$$\begin{aligned}
 (22) \quad & \left\{ \begin{array}{l} \text{pass}(s), \text{pass}(m), \text{pass}(p), \\ \text{pass}(s \oplus p), \text{pass}(s \oplus m), \text{pass}(m \oplus p), \\ \text{pass}(s \oplus p \oplus m) \end{array} \right\} \\
 & \hspace{10em} (\text{Rooth, 1992, p. 83})
 \end{aligned}$$

Based on this account, we propose that, following Ferreira (2016, p. 358) and considering a scenario in which three events of “The woman buys a candle” have happened (*e*₁, *e*₂, *e*₃), the denotation of a bare VP such as “The woman -buy- a candle” is (23)a, whereas a progressive reading would be (23)b and a habitual reading would be (23)c. Similar to what has been described by Kiss (1998, p. 266) for object foci, the set of events at which the woman can be said to have bought candles is ordered such that the total set takes the highest value, whereas singular events take the lowest value, with combinations of two events in between.

$$\begin{aligned}
 (23) \quad & \text{a. } \llbracket \text{VP} \rrbracket = \{e_1, e_2, e_3, e_1 \oplus e_2, e_2 \oplus e_3, e_1 \oplus e_3, e_1 \oplus e_2 \oplus e_3\} \\
 & \text{b. } \text{sg}(\llbracket \text{VP} \rrbracket) = \{e_1, e_2, e_3\} \\
 & \text{c. } \text{pl}(\llbracket \text{VP} \rrbracket) = \{e_1 \oplus e_2, e_2 \oplus e_3, e_1 \oplus e_3, e_1 \oplus e_2 \oplus e_3\} \\
 & \hspace{10em} (\text{Ferreira, 2016, p. 358})
 \end{aligned}$$

Assuming that Rooth’s (1992) account of scalar implicatures translates to events, we can predict that marking the singularity of an event via the progressive marker *táan* would implicate the negation of event plurality.⁷ This exhaustivity effect of excluding a set of relevant alternatives is inherently focal. It ranks below corrective focus on the contrastive focus scale in Cruschina (2021, p. 2), presented in (24).

- (24) information focus > exhaustive focus > mirative focus
 > corrective focus

This provides us with a straightforward account of the incompatibility between progressive marking and focal object fronting in Yucatec. Specifically, such a combination would contrastively focus both (i) the object to the exclusion of other possible object constituents and (ii) event singularity to the exclusion of event plurality.

In other words, we propose that the progressive in Yucatec is itself a means of focalization, meaning that the auxiliary functions as an operator that selects one particular way of presenting the event. This also means that, at least in Yucatec, the progressive is not entirely restricted to its aspectual function, but, in addition, this aspectual function (presenting the event as ongoing) is also inherently foregrounded against the background of other possible ways of presenting the same event in the relevant discourse situation. A Yucatec sentence with contrastive object fronting and the progressive marker *táan* would therefore trigger two contrastive foci, possibly of different strength. As further discussed below, the corresponding “strategy of inquiry” is probably dispreferred by the speakers since it would target two Questions Under Discussion simultaneously (Beaver et al., 2017, p. 267–269). Therefore, the speakers replace it by the semantically similar, but not focally marked habitual/imperfective *k* auxiliary.

⁷ Note that this implicature would be cancellable (Huang, 2017), but should remain effective until canceled.

5 Discussion

In this section, we discuss the plausibility and validity of our results and the suggested analysis, relating it to both the broader discussion on linguistic evidence and methodologies and other restrictions that have been observed previously in cases of focus fronting.

The most important point to be discussed is our previously mentioned line of argumentation with respect to the question of the (non-)categorical nature of the restriction at hand. It is obviously true that our (categorical) data do not yet show (i.e. prove) that the restriction on the co-occurrence of object fronting and progressive aspect marking is indeed categorical in Yucatec. However, note again that (i) although limited in their scope, our clear-cut results distinctly suggest the potential for a categorical incompatibility between focus fronting and progressive aspect, and (ii) the data predominantly support this hypothesis rather than its opposite, as there is no evidence within our findings that would justify the exploration of an opposing hypothesis. This argument will be referred to as Categorical Hypothesis (CH) in what follows.

Of course, further experimental work is required to show if the restriction that we observe is indeed categorical or rather a dispreferred pragmatic condition/strategy: in the latter case we would of course expect a lower frequency of acceptability when compared to constructions with focus fronting and other aspect auxiliaries. One obvious line of research to verify the CH would be to test the acceptability of fronted focus constructions with PROG in Yucatec with native speakers. However, irrespective of this possibility, our results from two different and independent kinds of data (elicited and corpus data) serve as a valuable point of departure for an investigation of the observed focus effects in Yucatec. Particularly, the fact that progressive marking is relatively frequent in the elicited responses, yet completely absent with fronted objects (under pragmatically very similar conditions), is evidence that we are not dealing with a spurious correlation.

Further note that, even from an acceptability judgement perspective, it is still highly challenging to differentiate whether we are dealing with contextual inappropriateness or straightforward ungrammaticality (Schütze, 2005). Thus, although not suggested by our data, a possible scenario would be one in which object fronting with progressive marking is not strictly ungrammatical, but rather highly inappropriate at the pragmatic level, as one could assume for e.g., (25)c. If we interpret a focused constituent as an answer to a current Question Under Discussion (QUD), two simultaneous foci, on both the fronted object and the singularity of a specific event, would be an attempt to answer two QUDs, such as e.g., (25)a and (25)b, simultaneously. According to Roberts (2012, p. 8), such subquestions should be addressed “one at a time”, meaning that speakers come up with strategies to answer questions by dividing them into subquestions and answering them consecutively one by one (Riester, 2019). This option is not at the participants’ disposal in any kind of straightforward acceptability judgment test of the corresponding phenomenon.

- (25) a. What does the woman buy?
 b. What is the woman doing?
 c. [CANDLES]_F is what the woman is [BUYING]_F.

All in all, we believe that observing different kinds of production data is a necessary and important step in a line of research that needs to encompass future experiments taking into account the caveats we have mentioned. For now, all we can and wish to argue is that our empirical observations form a strong basis for the CH, according to which object fronting is indeed categorically incompatible with progressive marking in Yucatec. Our semantic account renders these observations plausible and provides predictions about the nature of the effect.

Another important point to be addressed is that our observations tie in with those made by Güldemann (2003, p. 323), who elaborates “the hypothesis by Hyman and Watters (1984) that the progressive is an inherently focused verb category”. He observes that marking mechanisms for predication focus and present progressive frequently show a formal similarity in Bantu languages. In some instances, this isomorphism can be seen as a consequence of a directional grammaticalization shift, moving from predication focus to progressive. Güldemann (2003, pp. 349–350) argues that “a present progressive can focus on the HIC-ET-NUNC of the relevant state of affairs [and] can also enhance another semantic component, namely the ongoing, continuous nature of the event. [...] This in turn is closely related to the notion of emphasis and builds another possible bridge between the progressive and the focus of an utterance”. Similarly, Smith (1997, p. 74) states that “the progressive viewpoint has meanings that do not arise for other types of imperfective. Nuances of activity, dynamism, and vividness are often associated with the sentences of this viewpoint.” We consider these observations to be pragmatic extensions of the semantics laid out in Section 4.

It is also worth commenting that restrictions on fronted foci (syntactic, semantic, prosodic, or a combination thereof) are far from being rare. For instance, Pusch (2003) and Cruschina and Remberger (2017) observe that focus fronting in Romance languages is incompatible with negation, and with imperative and other markers of illocutionary force. Cruschina and Remberger (2017) further observe that, in most Romance languages, nominal and adjectival predicates of copular constructions cannot be fronted foci. Also, focus fronting is largely restricted to contrastive foci in Romance languages (Zubizarreta, 1998; Cruschina and Remberger, 2017) and in Hungarian (Kiss, 1998).⁸ Finally, recall from Section 2 that Yucatec itself has previously identified restrictions on fronted foci (e.g., the exclusion of nominal expressions introduced by the definite article). As such, the restriction on fronted foci that we argue for and document here for Yucatec should not be considered a peculiar quirk. Rather, it adds to the long list of restrictions observed cross-linguistically on focus fronting.

6 Conclusions

In this article, we have presented evidence of a restriction on focus structures in Yucatec Maya that makes object fronting incompatible with the progressive aspect marker *táan*. In our production study, object fronting and progressive aspect marking are mutually exclusive, even though we found abundant instances

of each of the two individually ($N_{OV} = 256/N_{PROG} = 161$). Our *post-hoc* corpus study points in the same direction, since none of the 42 clauses with fronted focused direct objects in *Maayáaj tsikbalilo'ob Kaampech* (30,012 words in total) showed progressive aspect. In order to account for the observed incompatibility in our data, we have proposed that the (use of the) progressive marker implies a contrastively focal function, which we understand as asserting event singularity (following Ferreira, 2016) to the exclusion of event plurality. This exclusion arises as a scalar implicature in the sense of Rooth (1992) and would lead to a double focus construction if combined with a fronted object.

We also discussed whether the observed incompatibility should be understood as a case of ungrammaticality or rather as a sub-optimal way of information packaging relative to the QUD structure of a given discourse. Although solving this particular issue goes beyond the scope of this work, we have nonetheless presented suggestions for future research regarding possible intervening factors, while at the same time arguing for the validity of production data as a point of departure for such an investigation. Finally, we argued that our observations should be connected to the isomorphism between marking mechanisms for predication focus and present progressive in Bantu languages, as well as to restrictions on fronted foci in Romance languages, again lending plausibility to the idea that the progressive auxiliary in Yucatec Maya is focal and therefore disallowed in sentences with fronted focused objects.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

8 Cruschina (2006) reports fronted informational foci in Sicilian, meaning that Sicilian apparently does not limit focus fronting to contrastive contexts.

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Author contributions

MU: Formal analysis, Visualization, Writing—original draft, Writing—review and editing, Conceptualization, Data curation, Investigation, Methodology, Project administration, Resources, Supervision, Funding acquisition, Validation. RG-B: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Resources, Writing—original draft, Writing—review and editing. JF: Formal analysis, Project administration, Visualization, Writing—original draft, Writing—review and editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary Material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/flang.2023.1286520/full#supplementary-material>

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