Random Choice Modality: The View from Chuj (Mayan)

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1 Introduction

Context: Crosscategorial modality. Modality cuts across syntactic categories (Kratzer 1981), but most work in formal semantics has focused on verbal auxiliaries. The focus has recently broadened beyond the verbal domain (e.g Arregui et al. 2017) and cross-categorial questions arise, e.g.:

Q1 What modal flavors can DPs express?

Q2 To what extent do they mirror those of VP modals?

Q3 To what extent is the modal component of modal expressions tied to their syntactic position?

Goal. We focus on a DP modal flavor, random choice modality (RCM), and bring data from Chuj (Mayan) with relevance to Q1-Q3.

Random choice modality. RC indefinites are modal indefinites (Alonso-Ovalle & Menéndez-Benito 2015, henceforth AO & MB).

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Consider sentence (1), with the Spanish RC modal indefinite *un NP cualquiera* (AO & MB 2011, 2013, 2018). The sentence conveys:

1. that María bought a gift (like a standard indefinite), and
2. that she *could have bought* any gift (the RC modal component.)

(1) María compró un regalo cualquiera.
María bought a gift CUALQUIERA
≈ 'María bought a random gift.'[1]

Similar items have been identified crosslinguistically: German *irgendein* (Kratzer & Shimoyama 2002, Buccola & Haidas 2017), the Korean *-na* indeterminates (Choi 2007, Kim & Kaufmann 2007, Choi & Romero 2008), Italian *uno qualsiasi* and *un qualunque* (Chierchia 2013), and Romanian *un oarecare* (Fălăuş 2015, 2014), among others.

(2) GERMAN
Hans hat irgend-ein Buch gekauft.
Hans has IRGEND-INDF book bought
≈ 'Hans bought a random book.' (Buccola & Haidas 2017)

(3) KOREAN
John-un amwu-khadu-na cip-ess-e.
John-TOP AMWU-card-OR take-PAST-DEC
≈ 'John picked a random card.' (Choi 2007)

What is random choice modality? There is no consensus.

Chierchia (2013) (mostly in passing): Italian *uno qualsiasi* and German *irgendein* are interpreted under the scope of a covert *bouletic* modal. (2) conveys that Hans' desires did not favour any specific book.

[1] Abbreviations in glosses are as follows: A: ergative/possessive; AG: agentive suffix; B: absolutive; ALGÚN: Spanish *algún*; CLF: noun classifier; CUALQUIERA: Spanish *cualquiera*; DEM: demonstrative; DIV: derived intransitive suffix; DTV: derived transitive suffix; INDF: indefinite; IRGEND: German *irgend-*; KOMON: Chuj *komon*; IV: intransitive status suffix; PFV: perfective; TOP: topic.

Here, and throughout the handout, we use *random* and, later on, *unexpectedly* in the translations of sentences with *komon*. This is just a rough approximation. We are not assuming that *komon* and *random* or *unexpectedly* are equivalent.

AO & MB 2018: *un NP cualquiera* is interpreted relative to the *decision* of the agent. (1) conveys that María decided to buy a book and that that decision did not favour any specific book.[2]

Buccola & Haidas (2017): RC involves a simplicity-based comparison of alternative actions. RC arises when *irgendein* combines with the adverb *einfach* ('simply'), which can be covert. *Irgendein* contributes (i) the proposition that Hans bought a book in a set D and (ii) the alternative propositions that Hans bought a book in $D' \subseteq D$. *Einfach* conveys that buying a book in any of these subset domains would not have been simpler for Hans.[3]

> *Notice that the three previous accounts are tightly connected to* ***agentivity****. Without an agent,* RC *cannot arise.*

Finally, Choi (2007) and Choi & Romero (2008): RCI convey counterfactual modality, (3) conveys that John picked a card and that he would have also picked one if the set of actual cards had been different.[4]

A limited sample of languages studied. The sample of languages studied remains modest, and our understanding of the attested variation in the expression of RCM is limited.

We contribute new data from **Chuj**, a Q'anjob'alan Mayan language spoken by 45,000 to 70,000 speakers in Huehuetenango, Guatemala, and Chiapas, Mexico (Piedrasanta 2009). See Fig. 1.

> All Chuj data, unless otherwise attributed, come from original fieldwork conducted with speakers of the San Mateo Ixtatán variant of Chuj. Data were collected in Huehuetenango, Guatemala and Chiapas, Mexico, and with a consultant in Montreal.

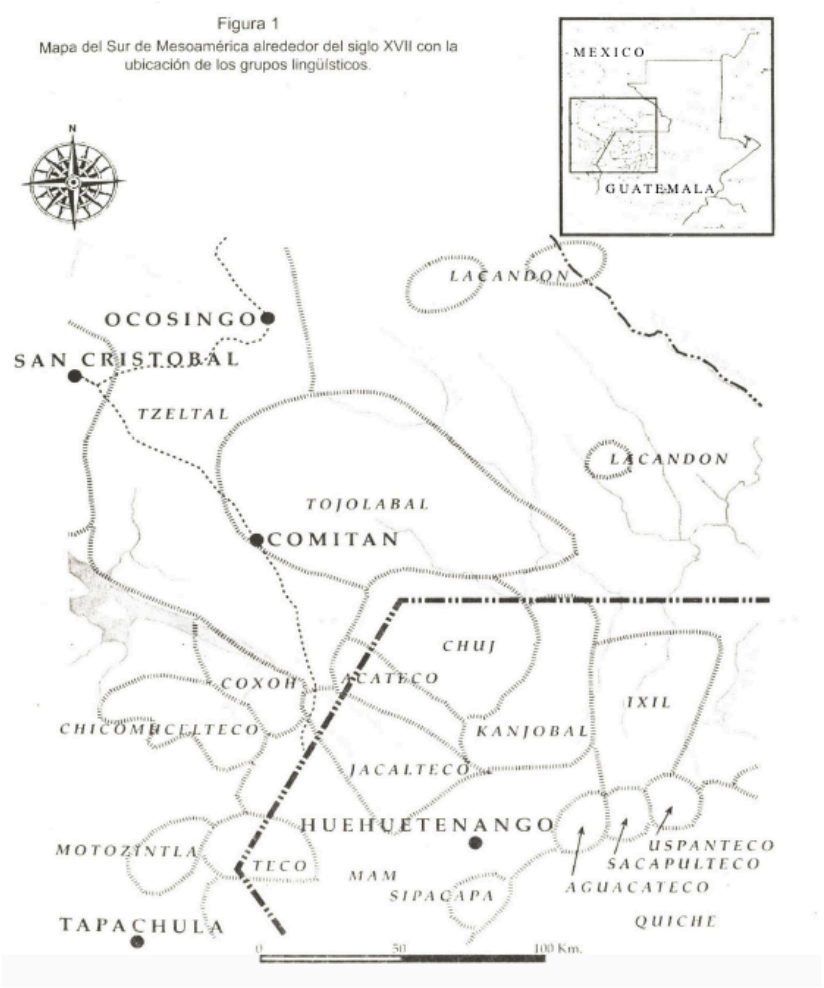


Figure 1: Chuj speaking area (Piedrasanta 2009, 23)

[2]Unlike the bouletic account, the modal condition can be true in cases where the agent wanted to pick a particular book, but did not decide to do so.

[3]This excludes situations where Hans wanted to take a particular book, since, in that case, picking a book from a subset of books containing the desired book would have been simpler than picking a book from the whole set of books (less books would have to be discarded.

[4]This condition is true in RC scenarios, but not only there (AO & MB 2018).

Why Chuj?

Reason 1. A language with DPs that can convey RC. (4), with modifier *komon* within an indefinite DP, can convey 1 and 2, like other RCIs.

1. that Xun bought a book, and
2. that he *could have bought* any book.

(4) *Komon* in the DP
Ix-s-man [$_{DP}$ jun **komon** libro] waj Xun
PFV-A3-buy INDF KOMON book CLF Xun
≈ 'Xun bought a random book.'
(The counterpart of (4) without *komon* only conveys 1.)

Reason 2. Different enough for comparison. The components involved in the expression of RC in Chuj are different from other known cases. The modifier *komon* can also be part of the verbal complex:

(5) *Komon* in the VP
Ix-s-**komon**-man-ej jun libro waj Xun.
PF-A1S-KOMON-buy-DTV INDF gift CLF Xun
≈ 'Xun randomly bought a book.'

Both (4), with *komon* in DP and (5), with *komon* in VP, can describe RC scenarios, where the agent was indifferent to the book. This provides an ideal testing ground to probe into the nature of RC modality.

(6) SCENARIO 1 (RANDOM CHOICE): *Xun had to buy a book a week ago for school. He rarely reads and so decided to buy a book at random. The book ended up to being really special for him.*

Both (4) and (5) are **true** in this scenario.

Finally, *komon* in the VP can also convey a *likelihood* component (which we will link RC modality to), made salient in sentences without agents:

(7) Ix-**komon**-kot ix Malin.
PFV-KOMON-arrive CLF Malin
≈ 'Malin randomly/unexpectedly arrived.'

Structure.

§ 2 description and analysis of *komon* in the verbal domain.
§ 3 description and analysis of *komon* in the nominal domain.
§ 4 conclusion

2 *Komon* in the verbal domain (*komon$_{vP}$*)

2.1 Distribution: The Chuj verbal complex

Chuj is an ergative-absolutive, head-marking language, and fully inflected verbs exhibit the template in (8).

(8) *Transitive verb template in Chuj*
TAM − Set B − Set A − **ADV** − ROOT − STATUS SUFFIX
TAM = tense-aspect-mood marking.
Set B = absolutive marking
Set A = ergative marking (also used as possessive marking)
Status suffix = marks verbs for transitivity

A limited set of adverbs **ADV** surface within the verbal complex, including *mol* 'together' and *te*, an intensifier (other Mayan languages allow adverbs in this position, see e.g. Vázquez Álvarez 2011 on Ch'ol).

(9) Ix-ko-**mol**-man-ej jun libro.
PFV-A1P-together-buy-DTV INDF book
'We bought a book together.'

(10) Ix-ko-**te**-man-ej jun libro.
PFV-A1P-INSF-buy-DTV INDF book
'We repeatedly bought a book.'

Distributionally, *komon$_{vP}$* patterns with these adverbs.

(11) Ix-ko-**komon**-man-ej jun libro.
PFV-A1P-KOMON-buy-DTV INDF book
≈ 'We randomly bought a book.'

2.2 Interpretation

Recall from the introduction (5), that verbal *komon* in transitive sentences can give rise to random choice modality.

At the same time, verbal *komon* can also give rise to a 'likelihood' component: that the event was unexpected.

Strategy: To better understand *komon*, we look beyond transitives.

Unergative verbs. With a basic intransitive, like (12), $komon_{vP}$ conveys that the event described was not expected, as corroborated by the felicity conditions below the example:

(12) Ix-**komon**-chanhal waj Xun.
PFV-KOMON-dance CLF Xun
≈ 'Xun randomly/unexpectedly danced.'

Felicitous scenario for (12): *Xun is waiting for the bus with other people who are waiting seriously. He starts dancing.*
Infelicitous scenario for (12): *Xun is at a venue where everyone is expected to perform the same dance, and so Xun dances it.*

Unaccusatives. We find the same unexpectedness meaning component with unaccusatives (and other non-volitional predicates):

(13) Ix-**komon**-kot ix Malin.
PFV-KOMON-arrive CLF Xun
≈ 'Malin randomly/unexpectedly arrived.' (repeated from (7)).

Felicitous scenario for (13): *Malin lives far away and she didn't tell us he'd visit, but she just arrived.*
Infelicitous scenario for (13): *Malin told me she'd come visit at 2:00pm. It's 2:00pm and she just arrived.*

(Notice again that the modal component that $komon_{vP}$ contributes is not tied to agentivity, unlike what AO&MB 2018 assume for Spanish *un NP cualquiera*.)

Statives. We also find the unexpectedness component with verbal predicates overtly marked as statives.

(14) **Komon** way-nak uch Xuwan.
KOMON sleep-STAT CLF Xuwan
'Xuwan was unexpectedly asleep.'

Felicitous context for (14): *5 year-old Xuwan is usually very excited in the morning, but this morning she was asleep.*
Infelicitous context for (14): *5 year-old Xuwan has been running around all day.*

Interim conclusion: $Komon_{vP}$ contributes more than just RCM.

So now, let's look at transitives again.

Transitive verbs. Consider sentence (15):

(15) Ix-s-**komon**-yam-ej jun regalo ix Malin.
PFV-A1S-KOMON-grab-DTV INDF gift CLF Malin
≈ 'Malin randomly/unexpectedly grabbed a gift.'

Unexpected event scenario. The sentence in (15) can convey unexpectedness. Consider its felicitous use in scenario (16), where the event of Malin's picking a gift is not expected—because it was not her turn to choose.

(16) UNEXPECTED EVENT SCENARIO: *Malin is at a gift exchange. She knows there's a jackpot of $1,000 and that the other gifts are cheap. There are four gifts left, one must be the jackpot.* ***It's not Malin's turn to choose****, when she notices that one of the gifts is wrapped in blue, while the other three in red. Even though it's not her turn, she runs to the blue gift and unwraps it. It's the jackpot!*

(repeated for illustration)

(15) Ix-s-**komon**-yam-ej jun regalo ix Malin.
PFV-A1S-KOMON-grab-DTV INDF gift CLF Malin
≈ 'Malin randomly/unexpectedly grabbed a gift.'

Random choice scenario. As we saw before, the sentence in (15) can also felicitously describe the scenario in (17) where a random choice was made, just like counterpart sentences with Spanish *un NP cualquiera*.

(17) RANDOM CHOICE SCENARIO: *Malin is at a gift exchange. She knows there's a jackpot of $1,000 and that the other gifts are cheap. There are four gifts left, one must be the jackpot. It's Malin's turn to choose. All of the gifts are wrapped the same,* ***so Malin just picks one at random****. It's the jackpot!*

Crucial points:

- In the UNEXPECTED EVENT SCENARIO, the event of Malin picking a gift is *less* expected than any of the most expected events (which, given the facts, would not be events of picking a gift.)
- In the RC SCENARIO (17), Malin was expected to pick a gift, but the picking of the actual gift that she picked was *no more expected* than the event of picking any of the other gifts that she could have picked.
- We contend that what unifies the felicity conditions on $komon_{vP}$ is a modal component that conveys that, given the circumstances, the most expected worlds where the described event happens are no more expected than the most expected worlds where the event does not happen.

2.3 A modal adverb conveying unexpectedness.

Background assumptions. We assume that transitive and unaccusative verbs express relations between individuals (their internal arguments), events, and worlds.

(18) a. $[\![\text{ grab }]\!] = \lambda x.\lambda e.\lambda w.\text{GRAB}_w(x)(e)$
b. $[\![\text{ arrive }]\!] = \lambda x.\lambda e.\lambda w.\text{ARRIVE}_w(x)(e)$

Agents get added via Event identification (Kratzer 1996). *vP*s express relations between eventualities and worlds:

(19) $[\![[_{vP} \text{ Xun grab that book }]]\!] =$
$\lambda e.\lambda w.\text{GRAB}_w(\text{B})(e)$ & $\text{AGENT}(e)(\text{XUN})$

We will ignore the contribution of temporal and aspectual (TAM) markers and assume external existential closure of properties of eventualities:

(20) $[\![[\exists_e [_{vP} \text{ Xun grab that book }]]]\!] =$
$\lambda w.\exists_e[\text{GRAB}_w(\text{B})(e)$ & $\text{AGENT}(e)(\text{XUN})]$

The modal condition.

We treat $komon_{vP}$ as a *vP* modifier that adds to the event description expressed by the *vP* a modal condition. In symbols:[5]

(21) $[\![\text{ komon}_{vP} \text{ f}_{\text{circ}_{\langle i,st\rangle}}]\!]^v = \lambda R_{\langle i,st\rangle}.\lambda e.\lambda w.$

$$R_w(e)(x) \quad \& \quad \underbrace{\begin{array}{c}\text{Max}_{\leq_{g(w)}}(\{w' : \text{HAPPEN}_{w'}(e)\} \cap \mathbf{f}(e)) \\ \leq_{g(w)} \\ \text{Max}_{\leq_{g(w)}}(\{w' : \neg\text{HAPPEN}_{w'}(e)\} \cap \mathbf{f}(e))\end{array}}_{\text{modal condition}}$$

Let's unpack this on the next page:

[5] We use i as the type of eventualities, and e or s as variables ranging over eventualities. We assume a Lewisian ontology (Lewis 1968), where individuals and events are world-bound. $\text{HAPPEN}_{w'}(e)$ is true if a counterpart of e (event maximally similar to e) is part of w'.

(repeated for illustration)

(21) $[\![\text{komon}_{vP}\ \text{f}_{\text{circ}\langle i,st\rangle}]\!]^v = \lambda R_{\langle i,st\rangle}.\lambda e.\lambda w.$

$$R_w(e)(x) \quad \& \quad \underbrace{\begin{array}{c}\text{Max}_{\leq_{g(w)}}(\{w' : \text{HAPPEN}_{w'}(e)\} \cap \mathbf{f}(e)) \\ \leq_{g(w)} \\ \text{Max}_{\leq_{g(w)}}(\{w' : \neg\text{HAPPEN}_{w'}(e)\} \cap \mathbf{f}(e))\end{array}}_{\text{modal condition}}$$

- The possibilities that the modal component of $komon_{vP}$ invokes are projected from the type of events described by the *vP* (Hacquard 2006).
- $\text{f}_{\text{circ}\langle i,st\rangle}$ is a variable ranging over functions mapping events to sets of worlds and **f** its value—$v(f)$, we use v for the variable assignment.
- **f** provides *a certain type* of *circumstantial* modal base: it projects from e the set of worlds w' where a set of circumstances (true facts) around the preparatory stage of e are true.
- g is a **stereotypical ordering source**: $g(w)$ returns a set of propositions describing the most natural course of events in w.

  for any worlds $w', w'', w' >_{g(w)} w''$ iff w' gets closer to what is expected given the normal course of events in w than w''. The ordering is defined with respect to $g(w)$:

  $w' \geq_{g(w)} w''$ iff $\{p : w' \in p \ \&\ p \in g(w)\} \supseteq \{p : w'' \in p \ \&\ p \in g(w)\}$ (Kratzer 1991)

  We make the Limit Assumption: that there are worlds ranked higher than any others.
- In an abuse of terminology, where p, q are sets of possible worlds, we write '$p \geq_{g_w} q$' to convey that any p-world is at least as close to what is expected given the normal course of events in w than any q-world.

What the modal condition conveys in the world of evaluation w is that the most expected worlds in w where the set of actual circumstances picked up by **f** obtain and (a counterpart) of e occurs are no more expected, given what is normal in w, than the most expected worlds where those circumstances obtain and no counterpart of e occurs.

This condition will be met in cases where e is as likely to occur as any other likely event, and in cases where e is expected not to happen.

We abbreviate the modal condition in (21) as (22):

(22) $[\![\text{komon}_{vP}\ \text{f}_{\text{circ}\langle i,st\rangle}]\!]^g = \lambda R_{\langle i,st\rangle}.\lambda e.\lambda w.\ R_w(e)\ \&\ \neg\mathbf{f}\text{-EXPECTED}_w(e)$

Basic illustration. The modal condition covers basic "unexpected" cases with intransitives and statives.

(12) Ix-**komon**-chanhal waj Xun.
PFV-KOMON-dance CLF Xun
≈ 'Xun randomly/unexpectedly danced.'

Felicitous if: *Xun is waiting for the bus with other people who are waiting seriously. He starts dancing.*

(23) a. LF: $\exists_e$ [komon $\text{f}_{\text{circ}\langle i,st\rangle}$ $[_{vP}$ Xun danced]]

b. $[\![$ (23a) $]\!]^v =$
$\lambda w.\exists e[\text{AGENT}(e)(\text{XUN})\ \&\ \text{DANCE}_w(e)\ \&\ \neg\mathbf{f}\text{-EXPECTED}_w(e)]$

c. True in w iff (i) there is an event e of Xun dancing in w and (ii) the most expected worlds in w where the relevant circumstances at the preparatory stage of e hold and e happens are no more expected in w than the most expected worlds where those circumstances hold and e does not happen.

(ii) = **false** if Xun was expected to dance (see Fig. 2).

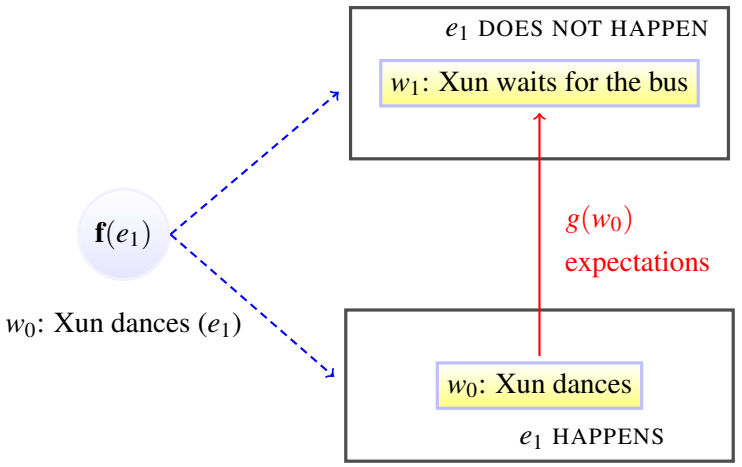


Figure 2: Context: *Xun komon-danced*

Illustration with transitives.

With transitives, like (15), the modal condition will be satisfied in both the UNEXPECTED EVENT and the RANDOM CHOICE scenarios.

First consider the contribution of $komon_{vP}$ in transitive clauses like (15), repeated below:

(15) Ix-s-**komon**-yam-ej jun regalo ix Malin.
PFV-A1S-KOMON-grab-DTV INDF gift CLF Malin
≈ 'Malin {randomly/unexpectedly} grabbed a gift.'

(24) a. LF: $\exists_e$ a gift $\lambda 1$ [komon $f_{circ_{\langle i,st\rangle}}$ [Malin grabbed t_1]]

b. $[\![$ (24a) $]\!]^v$ =
$\lambda w.\exists e \exists x \left[\begin{array}{c} \text{GIFT}_w(x) \ \& \ \text{AGENT}(e)(\text{M}) \ \& \ \text{GRAB}_w(e)(x) \\ \& \neg \textbf{f}\text{-EXPECTED}_w(e) \end{array} \right]$

c. True in w iff (i) there is an event e in w such that there is a gift x & e is an event of Malin grabbing x & (ii) given the relevant circumstances around the preparatory stage of e, the most expected worlds in w where e happens are no more expected than the most expected worlds in w where e does not happen.

Now consider (15) and (24) with respect to the UNEXPECTED EVENT SCENARIO, repeated below:

> UNEXPECTED EVENT SCENARIO: *Malin is at a gift exchange. She knows there's a jackpot of $1,000 and that the other gifts are cheap. There are four gifts left, one must be the jackpot.* ***It's not Malin's turn to choose****, when she notices that one of the gifts is wrapped in blue, while the other three in red. Even though it's not her turn, she runs to the blue gift and unwraps it. It's the jackpot!*

In the UNEXPECTED EVENT SCENARIO, $\textbf{f}(e)$ picks up worlds where it wasn't Malin's turn to choose, but she still willingly grabbed the blue gift (hence ruling out a random choice interpretation), and it was the jackpot.

(We can assume that $\textbf{f}(e)$ picks up worlds where the actual facts around the gift exchange are true.)

As shown in Figure 3, in the UNEXPECTED EVENT SCENARIO, the most expected worlds where Malin does not pick the jackpot (i.e. the worlds where the event does not happen) are worlds where no gift is picked at all (since it's not Malin's turn to choose), and those are more expected than the worlds where the jackpot is picked.

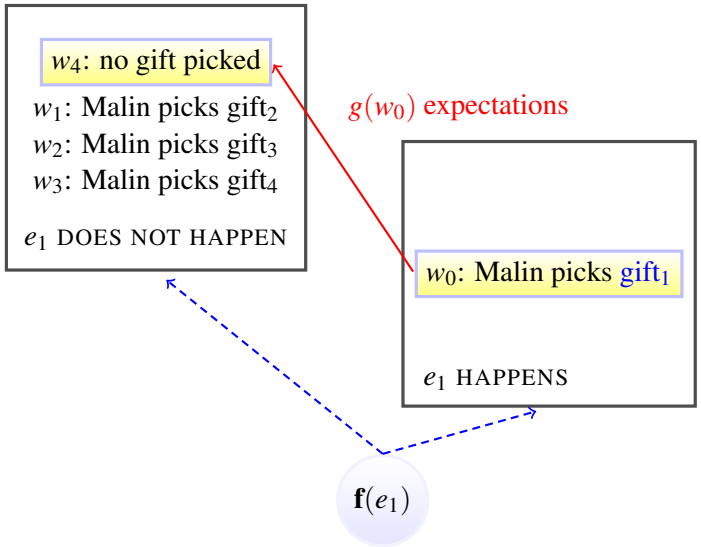


Figure 3: Unexpected Event Scenario : *Malin komon-grabbed a gift*

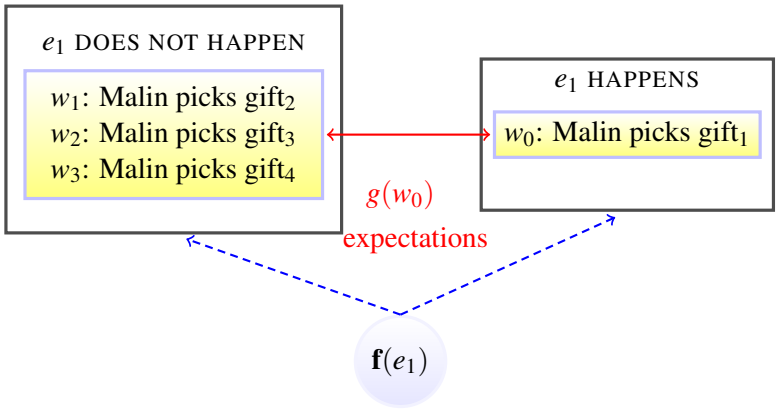
$\therefore$ (15) = **true** in the UNEXPECTED EVENT SCENARIO.

And now consider (15) and (24) (repeated for convenience above) with respect to the RANDOM CHOICE SCENARIO, repeated below:

> RANDOM CHOICE SCENARIO: *Malin is at a gift exchange. She knows there's a jackpot of $1,000 and that the other gifts are cheap. There are four gifts left, one must be the jackpot. It's Malin's turn to choose. All of the gifts are wrapped the same,* ***so Malin just picks one at random****, and it's the jackpot!*

In the RANDOM CHOICE SCENARIO, $\textbf{f}(e)$ picks up worlds where it was Malin's turn to choose (hence ruling out an 'unexpected event' interpretation), she grabbed a gift at random, and it was the jackpot.

As shown in Figure 6, the most expected worlds where Malin does not grab gift_1 and the relevant circumstances obtain are not worlds where Malin didn't grab a gift (unlike the unexpected event scenario), but worlds where Malin grabbed a different gift. In the scenario, those worlds are **as likely** as the worlds where the gift with the jackpot is grabbed.



w_0: Malin picks gift_1 (e_1)

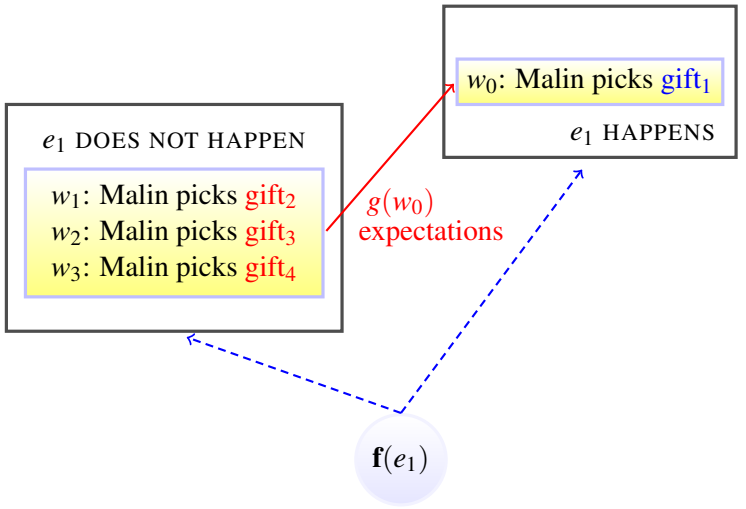
Figure 4: Random Choice Context : *Malin komon-grabbed a gift*

$\therefore$ (15) = **true** in the RANDOM CHOICE SCENARIO.

Let us consider now a scenario where the modal condition of $komon_{vP}$ is not satisfied, with what we will dub the UNREMARKABLE SCENARIO:

(25) UNREMARKABLE SCENARIO: *Malin is at a gift exchange. She knows there's a jackpot of $1,000 and that the other gifts are cheap. There are four gifts left, one must be the jackpot. It's Malin's turn to choose, when she notices that one gift is wrapped in blue, while the other three in red. Malin grabs the blue gift.* ***It's a cheap gift!***

The target sentence in (15) is correctly predicted to be false in this scenario, since, given the circumstances (Malin wants to pick the jackpot and it's her turn), picking the gift wrapped in blue was more expected than not picking the gift in blue, as shown in Figure 5 on page 8.



w_0: Malin picks $\text{gift}_1(e_1)$

Figure 5: Unremarkable Context : *Malin komon-grabbed a gift*

Summary *komon*$_{vP}$

Komon$_{vP}$ is a circumstantial modal that adds to the denotation of the *vP* that the most expected worlds where the described event happens are $\leq$ expected than the most expected worlds where the event does not happen.

The modal condition is true both in the unexpected and random choice scenarios.

Next. We turn to the contribution of *komon* in the nominal domain.

3 *Komon* in the nominal domain

3.1 Background on the Chuj DP

Chuj exhibits no case morphology on nominals. A set of classifiers are used as definite articles, and *jun* is the SG indefinite article (Royer 2019).

(26) Ix-y-il [**jun** tz'i'] [**winh** winak].
PFV-A3-see INDF dog CLF man
'The man saw a dog.'

A limited set of adjectives (e.g. colour, size, terms and *komon*) appear immediately before the nominal (Maxwell 1976; Coon 2018).

(27) Ix-s-man [$_{DP}$ jun **saksak** libro] ix Malin.
PFV-A1S-buy INDF white book CLF Malin
'Malin bought a white book.'

Adjectives can sometimes be stacked. In such cases, *komon* can appear on either side of other adjectives:

(28) Ix-s-man [$_{DP}$ jun {**komon**} saksak {**komon**} libro] ix.
PFV-A1S-buy INDF KOMON white KOMON book CLF
≈ 'She bought a {random} white {random} book.'

3.2 'Unremarkable' uses: *komon*$_{NP}$

In the nominal domain, *komon* can convey that the satisfier of the NP does not stand out compared to other individuals in the NP extension.

(*komon* grammaticalized from Spanish *común* 'common/average' (Hopkins 2012).)

In (29) *komon* can convey that Xun does not stand out as a student. A ranking of students is invoked with respect to how good their grades are.

(29) CONTEXT: *Xun is a student with average grades.*
[**Komon** estudyante] waj Xun.
KOMON student CLF Xun
≈'Xun is an average/unexceptional student.'

Note that the same 'unremarkable' interpretation is identified for RCM *uno NP cualquiera* in Spanish (AO & MB 2018):

(30) Juan es un estudiante cualquiera.
Juan is a student CUALQUIERA
≈ 'Juan is an unremarkable student.'

AO & MB (2018) assume that the RC and 'unremarkable' meanings of *uno NP cualquiera* correspond to two different, homophonous forms. But the fact that *komon* also license the unremarkable interpretation casts doubts on this assumption.

Notice, however, that what property determines the comparison varies. In (31) the students' parents' status seems to determine the ranking:

(31) CONTEXT: *Xun has average grades. His father is Justin Trudeau.*
Man **komon** estudyante-ok laj waj Xun, y-unin winh waj
NEG KOMON student-IRR NEG CLF Xun, A3-child CLF CLF
Justin Trudeau.
Justin Trudeau
'Xun is not just any student, he's Justin Trudeau's son.'

Komon$_{NP}$ In such cases, *komon* does not make reference to events.

We tentatively analyze this *komon* as a non-modal NP modifier that ranks its argument in a contextually determined scale of (types of) individuals.

It conveys (i) that the satisfier of the NP is like most other individuals and (ii) that it is ranked around the middle of the scale (hence the satisfier of the NP is "average" relative to the relevant scale). More in appendix.

Difficulties finding a scale? *Komon*$_{NP}$ is deviant with nouns that describe entities (or portions of matter) that are hard to rank with respect to each other or with nouns that cannot be ranked (since they describe singletons):

(32) a. ? **Komon** tumin jun k'en tik.
KOMON money one CLF DEM
Intended: ?'This is average money.'
b. # Ix-w-il k'en **komon** uj.
PFV-A1S-see CLF KOMON moon
Intended: #'I looked at the average moon.'

'Unremarkability' with DP objects. Note that the 'unremarkable' interpretation of $komon_{NP}$ is also present with full object DPs. (33) can describe the UNREMARKABLE scenario in (25), repeated below:

(33) Ix-s-yam [$_{DP}$ jun **komon** regalo] ix Malin.
PFV-A1S-grab INDF KOMON gift CLF Malin
≈ 'Malin grabbed a random/average/unremarkable gift.'

> UNREMARKABLE SCENARIO: *Malin is at a gift exchange. She knows there's a jackpot of $1,000 and that the other gifts are cheap. There are four gifts left, one must be the jackpot. It's Malin's turn, when she notices that one gift is wrapped in blue, while the other three in red. Malin grabs the blue gift.* ***It's a cheap gift!***

Recall from the previous section that $komon_{vP}$ does not trigger this interpretation: it is infelicitous in the UNREMARKABLE SCENARIO.

Is nominal *komon* always about 'unremarkability'? The answer is no. There are cases where nominal *komon* does not convey that the NP argument does not stand out, but, in fact, conveys something about the likelihood of the event described, like $komon_{vP}$ does.

3.3 $Komon_{DP}$: unexpectedness

Subject position: 'unexpected event interpretations.' In subject position *komon* can convey an 'unexpected event' interpretation in DP:

(34) CONTEXT: *A deer showed up in the village out of the blue.*
Ix-jaw [jun **komon** sakchej].
PFV-come INDF KOMON deer
≈ 'A deer unexpectedly appeared.'

The sentence conveys that the appearance of the deer was not expected. It is be felicitously followed by an assertion that the deer is remarkable:

(35) Felicitous continuation of (34)
Te' niwak nok' te'-ay y-ib' nok'.
INTS big CLF INTS-EXT A3-strength CLF.
≈ 'It (the deer) was very big and strong.'

Object position: Random choice. Nominal *komon* can also describe a RC scenario: (33) is also **true** in the RANDOM CHOICE SCENARIO.

> RANDOM CHOICE SCENARIO: *Malin is at a gift exchange. She knows there's a jackpot of $1,000 and that the other gifts are cheap. There are four gifts left, one must be the jackpot. It's Malin's turn to choose. All of the gifts are wrapped the same,* ***so Malin just picks one at random****, and it's the jackpot!*

In fact, (33) is perceived as ambiguous in both scenarios. For example, in the RANDOM CHOICE SCENARIO, (33) can be true, because Malin picked a gift at random; but also false, because she picked an outstanding gift.

Conclusion. It seems like *komon* can still contribute the same likelihood component as $komon_{vP}$, but in the DP. We call this $komon_{DP}$.

***Komon*$_{NP}$ vs. *komon*$_{DP}$.** There are two possible contributions for *komon* in the nominal domain:

i. accessing a set of individuals (the NP extension) and contributing information about a ranking of individuals, or

ii. accessing a relation between events and individuals (the denotation of the DP argument) and conveying information about the likelihood of an event involved in this relation, similar to what $komon_{vP}$ does.

To convey (i), *komon* only requires accessing the NP. To convey (ii), it requires accessing the contribution of the vP.

We will assume an ambiguity between an NP modifier ($komon_{NP}$) and a D-modifier ($komon_{DP}$).

***Komon*$_{DP}$: adjacency.** When conveying unlikelihood, *komon* does not tolerate any material intervening between the D and *komon*. This is not the case when *komon* only conveys a non-modal, scalar component.

(36) Ix-s-yam [$_{DP}$ jun *k'ank'an* **komon** regalo] waj Xun.
PFV-A3-grab INDF yellow KOMON gift CLF Xun
'Xun grabbed a yellow random gift.'

Felicitous in unremarkable scenario.
Infelicitous in random choice scenario.

In sum:

Komon$_{NP}$ shares with *komon*$_{vP}$ a scalar component: the NP argument cannot be at the top of the ranking. Lots to discuss (and more in appendix), but our focus won't be *komon*$_{NP}$. Our focus will be *komon*$_{DP}$ which seems to pattern more like *komon*$_{vP}$.

3.4 Accounting for *komon*$_{DP}$

***Komon*$_{DP}$: Try 1.** We could treat *komon*$_{DP}$ as 'plugging in' *komon*$_{vP}$ on the *vP* argument of the DP:

(37) $\left[\!\left[\begin{array}{c} \cdot \\ \text{jun} \quad \cdot \\ \text{komon}_{DP} \quad \text{f}_{\text{circ}_{\langle i,st\rangle}} \end{array} \right]\!\right] = \lambda P_{\langle e,st\rangle}\lambda R_{\langle e,\langle i,st\rangle\rangle}.\lambda e.\lambda w.$

$\exists x[P_w(x)$ & $[[\![\text{komon}_{vP}]\!](\mathbf{f}_{\text{circ}_{\langle i,st\rangle}})(R_w(x))](e)(w)]$

Unexpected interpretations: Illustration.

(34) Ix-jaw [jun **komon** sakchej]
PFV-come INDF KOMON deer
≈ 'A deer unexpectedly appeared.'

(38) Semantics of (34)
a. LF: $\exists_e$ a komon (f) deer $\lambda 1$ [t_1 appeared]
b. $[\![(38a)]\!] = \lambda w.\exists e\exists x[\text{DEER}_w(x)$ & $\text{APPEAR}_w(x)(e)$&$\neg$**f**-$\text{EXPECTED}_w(e)]$
c. *Predicted truth conditions*: True in *w* iff there is an event *e* and a deer *x* such that *e* is an appearing of *x* & given the circumstances around the preparatory stage of *e*, the most expected worlds where *e* happens are no more expected than the most expected worlds where *e* does not happen.

Predicted to be true in cases where the deer appearing is not more expected than the deer not appearing, given the circumstances.

Random choice. Since we are making *komon*$_{DP}$ equivalent to *komon*$_{vP}$, its equivalence in the RC scenarios should not come out as a surprise.

(33) Ix-s-yam [$_{DP}$ jun **komon** regalo] ix Malin.
PFV-A1S-grab INDF KOMON gift CLF Malin
≈ 'Malin randomly grabbed a gift.'

(39) a. LF: $\exists_e$ a komon gift $\lambda 1$ Malin grabbed t_1
b. $[\![(39a)]\!] =$
$\lambda w.\exists e\exists x\left[\begin{array}{c} \text{GIFT}_w(x) \text{ \& } \text{AGENT}(e)(\text{M}) \text{ \& } \text{GRAB}_w(e)(x) \\ \text{\&}\neg\textbf{f}\text{-}\text{EXPECTED}_w(e) \end{array} \right]$

(40) *Predicted truth conditions:* True in *w* iff there is an event *e* such that there is a gift *x* & *e* is an event of Malin grabbing *x* & given the circumstances around the preparatory stage of *e*, the most expected worlds where *e* happens are no more expected than the most expected worlds where *e* does not happen.

As we saw before, these truth conditions are satisfied in the RC scenario, where the most expected worlds where *e* does not happen are still worlds where a gift is grabbed.

Two issues for Try 1.

1. Overgeneration. *komon*$_{DP}$ expected to be true, like *komon*$_{vP}$, in the UNEXPECTED EVENT SCENARIO.

(41) Ix-s-yam [$_{DP}$ jun **komon** regalo] ix Malin.
PFV-A1S-grab INDF KOMON gift CLF Malin
Intended: ≈ 'Malin unexpectedly grabbed a gift.'

> UNEXPECTED EVENT SCENARIO: *Malin is at a gift exchange. She knows there's a jackpot of $1,000 and that the other gifts are cheap. There are four gifts left, one must be the jackpot.* ***It's not Malin's turn to choose****, when she notices that one of the gifts is wrapped in blue, while the other three in red. Even though it's not her turn, she runs to the blue gift and unwraps it. It's the jackpot!*

Unlike its counterpart with *komon*$_{vP}$, the sentence in (41) is actually **false** in this scenario.

> The fact that the grabbing was not expected does not matter. What seems to matter is that, although no grabbing was expected, the grabbing of the blue gift was more expected than the potential grabbing of any of the other gifts.

2. Limits on the unexpected interpretation: The likelihood component is only available when the DP is headed by an indefinite determiner, not when headed by a definite determiner (42) or by a universal (43).[6,7]

(42) Ix-in-man [$_{DP}$ *ch'anh* **komon** libro].
PFV-A1S-buy CLF(=DEF) KOMON book
≈ 'I bought the average book.' → RC not possible.

(43) [Junjun **komon** libro] ix-in-man-a'.
∀ KOMON book PFV-A1S-buy-TV
≈ 'I bought every average book.' → RC not possible.

Try 2: Comparing events and individuals. *Komon$_{DP}$* does not compare a particular event with the most expected worlds where this event does not happen, but seems to hardwire a comparison of events that only differ with respect to (in this case) their themes.[8]

(44) $\left[\!\!\left[\begin{array}{ccc} & \text{DP} & \\ \text{D} & & \text{NP} \\ \text{D} & . & \\ & \text{komon}_{DP} \quad \text{f}_{\text{circ}\langle i,st\rangle} & \end{array} \right]\!\!\right]^{v} = \lambda R_{\langle e,\langle i,st\rangle\rangle}.\lambda e.\lambda w.$

$$\underbrace{\forall x \left[\begin{array}{c} \textcircled{1}\ [([\![\text{D}]\!]([\![NP]\!]))(R)](e)(w) \\ \& \\ \textcircled{2}[[\![\text{NP}]\!](w)(x) \ \&\ x \notin \{y : R_w(y)(e)\}] \\ \rightarrow \\ \textcircled{3} \left(\begin{array}{c} \text{Max}_{\leq_{g(w)}}(\{w' : \text{HAPPEN}_{w'}(e)\} \cap \mathbf{f}(e)) \\ \leq_{g(w)} \\ \text{Max}_{\leq_{g(w)}}(\{w' : \exists e'[R_{w'}(x)(e')]\} \cap \mathbf{f}(e)) \end{array} \right) \end{array} \right]}_{\text{modal condition}}$$

[6]The judgments were corroborated in contexts, not provided here for reasons of space.

[7]Note that there are no determiner restrictions with komon$_{\text{VP}}$.

[8]Under our analysis, *komon$_{DP}$* essentially creates a complex determiner, along the lines of (some of) the nonlocal modifiers discussed Larson 1999 and Zimmermann 2003.

Let's unpack this.

Komon$_{DP}$ takes a D and an NP as arguments to yield a DP denotation.
(a function from a relation R between individuals, events and worlds to a relation between events and worlds)

The DP denotation combines with its argument R (vP) ①.

Komon$_{DP}$ also conveys a modal condition.

This condition looks at all individuals in the NP extension that are not related to the described event e by R in the world of evaluation ②. It compares the likelihood of the event e with the likelihood of other events e' of the same type involving those individuals. The condition conveys that the most expected worlds where e happens are $\leq$ expected than the most expected worlds where e' happens ③.[9]

Illustration

(33) Ix-s-yam [$_{DP}$ jun **komon** regalo] ix Malin.
PFV-A1S-grab INDF KOMON gift CLF Malin
≈ 'Malin grabbed a random gift.'

RANDOM CHOICE SCENARIO: *Malin is at a gift exchange. She knows there's a jackpot of $1,000 and that the other gifts are cheap. There are four gifts left, one must be the jackpot. It's Malin's turn to choose. All of the gifts are wrapped the same, so Malin just picks one at random, and it's the jackpot!*

(45) LF: $\exists_e$[(jun) komon$_{DP}$ f](gift) λ1 Malin grabbed t_1

(46) $[\![(45)]\!] =$

$$\lambda w.\exists e \left[\begin{array}{c} \exists x[\text{GIFT}_w(x) \ \&\ \text{GRAB}_w(e) \ \&\ \text{AG(M)}(e)] \\ \& \\ \underbrace{\forall y \left[\begin{array}{c} [\text{GIFT}_w(y) \ \&\ y \notin \{z : \text{GRAB}_w(z)(e) \ \&\ \text{AG(M)}(e)\}] \\ \rightarrow \\ \left(\begin{array}{c} \text{Max}_{\leq_{g(w)}}(\{w' : \text{HAPPEN}_{w'}(e)\} \cap \mathbf{f}(e)) \\ \leq_{g(w)} \\ \text{Max}_{\leq_{g(w)}}(\{w' : \exists e'[\text{GRAB}_{w'}(y)(e')]\} \cap \mathbf{f}(e)) \end{array} \right) \end{array} \right]}_{\text{modal condition}} \end{array} \right]$$

[9]To make the formula easier to read, we omit from it a condition stating that those events e' are continuations of the preparatory stage of e.

(repeated for convenience)

(45) LF: $\exists_e$[(jun) komon$_{DP}$ f](gift) $\lambda 1$ Malin grabbed t_1

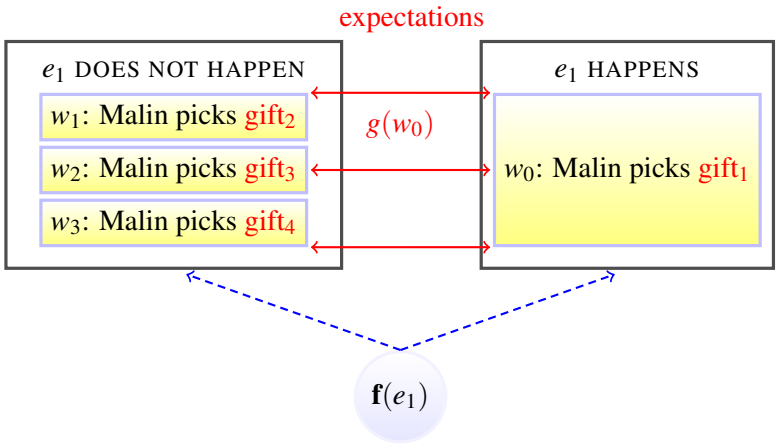
(46) $[\![(45)]\!] =$

$$\lambda w.\exists e \left[\underbrace{\forall y \left[\begin{array}{c} [\text{GIFT}_w(y) \ \& \ y \notin \{z : \text{GRAB}_w(z)(e) \ \& \ \text{AG(M)}(e)\}] \\ \rightarrow \\ \left(\begin{array}{c} \text{Max}_{\leq_{g(w)}}(\{w' : \text{HAPPEN}_{w'}(e)\} \cap \mathbf{f}(e)) \\ \leq_{g(w)} \\ \text{Max}_{\leq_{g(w)}}(\{w' : \exists e'[\text{GRAB}_{w'}(y)(e')]\} \cap \mathbf{f}(e)) \end{array} \right) \end{array} \right]}_{\text{modal condition}} \right]$$

$$\exists x[\text{GIFT}_w(x) \ \& \ \text{GRAB}_w(e) \ \& \ \text{AG(M)}(e)]$$
$$\&$$

True in w iff (i) there is an event e such that e is a grabbing of a gift by Malin, and (ii) for every gift x in w that Malin did not grab, it holds that the most expected worlds in w where e happens (and the relevant circumstances obtain) are $\leq$ expected than the most expected worlds in w where Malin grabs x (see Figure 6).

$\therefore$ (33) = **true** in RANDOM CHOICE SCENARIO



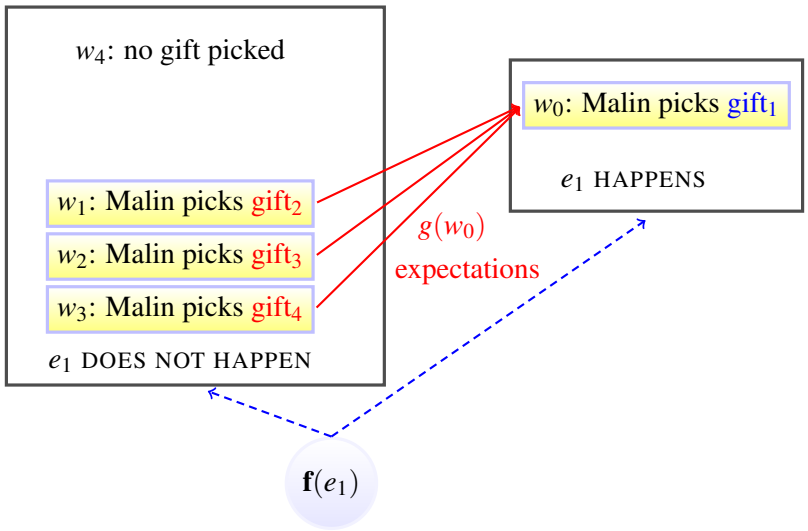
w_0: Malin picks gift$_1$ (e_1)

Figure 6: Random Choice Context : *Malin grabbed a komon gift*

'Unexpected event' interpretation expected to be false.

And (33) is predicted to be false in the UNEXPECTED EVENT scenario, since Malin was expected to grab the blue gift (see Figure 7).

UNEXPECTED EVENT SCENARIO: *Malin is at a gift exchange. She knows there's a jackpot of $1,000 and that the other gifts are cheap. There are four gifts left, one must be the jackpot. It's* ***not*** *Malin's turn to choose, when she notices that one of the gifts is wrapped in blue, while the other three in red. Even though it's not her turn, she runs to the blue gift and unwraps it. It's the jackpot!*



w_0: Malin picks gift$_1$(e_1)

Figure 7: Unexpected Event Context : *Malin grabbed a komon gift*

Notice that because it was not Malin's turn to grab a gift, the events that we are comparing are still less expected than Malin not grabbing a gift, but *komon*$_{DP}$ now hardwires a comparison between individuals.

$Komon_{DP}$, $komon_{vP}$, and random choice modality.

$Komon_{vP}$: In the RC SCENARIO, $komon_{vP}$ compares the actual grabbing with alternative grabbings of other gifts. But that was the case because of context alone: the most expected worlds where Malin does not grab the gift she grabbed are still worlds where she grabs a gift.

$Komon_{DP}$: In the RC SCENARIO, $komon_{DP}$ also compares the actual grabbing of a gift with alternative grabbings of gifts, but this time the comparison of alternative grabbings is required.

This accounts for the perceived equivalence between $komon_{vP}$ and $komon_{DP}$.

Unlike $komon_{vP}$, $komon_{DP}$ is incompatible with the UNEXPECTED EVENT SCENARIO: this is because $komon_{DP}$ hardwires a comparison of events that only differs with respect to the individuals contained in the extension of its NP argument.

Possible way to capture determiner restriction.

Consider again:

(42) Ix-in-man [$_{DP}$ *ch'anh* **komon** libro].
PFV-A1S-buy CLF(=DEF) KOMON book
≈ 'I bought the average book.' → RC not possible.

The definite classifier will trigger a uniqueness presupposition (that there's only one book) and the non-modal condition will convey that the speaker grabbed it.

In the modal condition, there is only one individual that can satisfy the first conjunct in the antecedent of the conditional in (47) —if the presupposition is satisfied, there will only be one book.

(47) $$\forall y \left[\begin{array}{c} \boxed{[\ \text{BOOK}_w(y)\ \&\ y \notin \{z : \text{BUY}_w(z)(e)\ \&\ \text{AG}(\text{SPEAKER})(e)\}]} \\ \rightarrow \\ \left(\begin{array}{c} \text{Max}_{\leq_{g(w)}}(\{w' : \text{HAPPEN}_{w'}(e)\} \cap \mathbf{f}(e)) \\ \leq_{g(w)} \\ \text{Max}_{\leq_{g(w)}}(\{w' : \exists e'[\text{BUY}_{w'}(y)(e')]\} \cap \mathbf{f}(e)) \end{array} \right) \end{array} \right]$$

But that book is in the set of things that the speaker grabbed in the described event, so the second conjunct in the conditional's antecedent is false. The modal condition holds vacuously and so *komon* contributes nothing.

To the extent that adding vacuous materials can result in deviancy, we explain why only $komon_{NP}$ is perceived here.

The same line of explanation extends to cases with ∀ determiners:

(43) [Junjun **komon** libro] ix-in-man-a'.
∀ KOMON book PFV-A1S-buy-TV
≈ 'I bought every average book.' → RC not possible.

In this case, the first conjunct in the predicted truth condition conveys that the speaker grabbed all books.

The antecedent of the conditional in the modal condition will also be always false, since all books are in the set of things that the speaker grabbed and, again, contributes nothing.

4 Conclusions

We started the talk with three questions:

Q1 What modal flavors can DPs express?

Q2 To what extent do they mirror those of VP modals?

Q3 To what extent is the modal component of modal expressions tied to their syntactic position?

Q1: We focused on RCM. We saw that RCM doesn't seem to be a uniform phenomenon. In Chuj, it derives from a likelihood component.

Q2: We saw that $komon_{DP}$ can convey the same modal flavor as $komon_{vP}$ (they both convey a likelihood component).

Q3: We saw that $komon_{vP}$ and $komon_{DP}$ differ in that the former conveys information about the likelihood of an event while the latter compares the likelihood of an event with alternative events that differ with respect to its event participants.

We are left with several questions for further research. For instance, Chuj features another modal morpheme (also discussed in Kotek & Erlewine 2016), that can trigger RC modality:

(48) Yalnhej tas libro'al ix-in-yam-a'.
YALNHEJ WH book PFV-A1S-grab-SS
≈ 'I grabbed a random book.'

To what extent does *yalnhej* differ from *komon*? And, more generally, how does *komon* differ with respect to the other items conveying RCM discussed in the literature?

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Appendix

A *Komon*$_{NP}$: ranking individuals

Determining the ranking. As a first approximation, we will assume that *komon*$_{NP}$ takes a covert free variable f ranging over a pre-order (a reflexive, transitive, and connected relation) whose field is the NP extension.

> (e.g. 'getting (at least) as good grades as', 'behaving (at least) as well as', or 'having parents (at least) as socially important as.')
>
> Preorders are not orders, since they are not antisymmetric (if both Xun and Malin get an A, then they both get as good grades as each other).

From this, we can determine an order ($\leq_{f_{equivalence}}$) between *sets* of individuals (Cresswell 1976, Bale 2008).

> For instance, for the preorder f 'having as good grades as', we can consider the equivalence relation ($f_{equivalence}$) (reflexive, transitive, symmetric) 'having the same grades as,' and order the equivalence classes determined by this relation (the set of individuals with same grades) by considering the preorder between individuals in those classes (a class of individuals having grade X is ranked at least as high as a class of individuals having grade Y if the individuals in the former class have at least as good grades as the individuals in the latter).
>
> Given a preorder f, f_{eq} is defined as in (i). The equivalence classes determined by f_{eq} can be ordered on the basis of the preorder, as in (ii):
>
> (i) $f_{eq}(a,b)$ iff $\forall x[(f(a,x) \leftrightarrow (b,x)) \;\&\; (f(x,a) \leftrightarrow (x,b))]$
>
> (ii) $[a]_f \geq_{f_{eq}} [b]_{f_{eq}}$ iff $\exists x,y[x \in [a]_{f_{eq}} \;\&\; y \in [b]_{f_{eq}} \;\&\; f(a,b)]$
>
> (Cresswell 1976, Bale 2008)

The contribution of *komon*$_{NP}$. *Komon*$_{NP}$ requires a scale of sets of individuals where most individuals (the non-exceptional individuals) fall around the middle range of the ranking and less individuals are ranked at the top or bottom of the ranking (NORM$(\geq_{f_{eq}})$).

Komon$_{NP}$ conveys that the equivalence class that its argument is in ($[x]_{f_{eq}}$) is (i) where most individuals rank (around the middle range of the ranking), and (ii) contains more individuals than any other class around the middle of the ranking.

(49) $[\![komon_{NP}\ f_{\langle e,e\rangle}]\!]^v = \lambda P_{\langle e,st\rangle}$:
PREORDER$(\mathbf{f})$ & FIELD$(\mathbf{f}) = P_w$ & NORM$(\geq_{f_{eq}})$.
$\lambda x.\lambda w.P_w(x)$ & $\underbrace{\text{MOST-MIDDLE}_{\geq_{feq}}([x]_{f_{eq}})}_{\text{scalar condition}}$

Illustration Consider the 'average student' example:

(29) CONTEXT: *Xun is a student with average grades.*

[**Komon** estudyante] waj Xun.
KOMON student CLF Xun

≈'Xun is an average/unexceptional student.'

(50) a. LF: [komon $f_{\langle e,e\rangle}$ student] Xun

b. Defined iff **f** is a preorder on the set of students in w, and most individuals are clustered around the middle of the order $\geq_{\mathbf{f}_{eq}}$. When **f** is 'has at least as good grades as', $\geq_{\mathbf{f}_{eq}}$ is a ranking of sets of students with same grades. The cells in the middle range of the ranking are required to contain the most students.

c. True in w when **f** is 'has at least as good grades as' iff (i) Xun is a student in w, and (ii) Xun's grades are in the middle range of the grade scale (and most students in the middle of the range are like him in that respect.)