On the inventory of v and Voice

Considerable research has been dedicated to the relationship between v and Voice, with notable contributions by Kratzer (1996), Harley (2013), a.o. Nonetheless, several unresolved issues persist, including (i) the comprehensive inventory and inherent characteristics of v and Voice; (ii) their selectional properties; (iii) the positions within a clause structure where the external argument can be introduced. We use data from Kaqchikel (<Mayan; ergative, V1/SVO, head-marking, pro-drop) to gain fresh insights into these issues. Our approach is rooted in the split vP-VoiceP framework, and we consider *v* and Voice to be conceptually different functional categories: only *v* introduces a new thematic relation, while the role of Voice is to manipulate the existing external argument role. We introduce the inventory of *v* and Voice heads in (1). We follow Bruening (2013) in associating heads with selectional features that a head needs to check by combining with a particular category. For instance, [S: V, N] means that the head has to combine with a complement of category V and a specifier of category N.

(1) *The inventory of v and Voice*

	v_{TV}	v_{ITV}	v_{Unacc}	v_{Caus}	$Voice_{TV}$	$Voice_{Pass}$	$Voice_{Refl}$
Syntax	S: V	S: V, N	S: V	S: V	S: V, N + [ERG]	S: V	S: V, N + [ERG]
Semantics	Agent(x)	Actor(x)	–	Causer(x)	–	$\exists$ ExtA	ExtA(x)=IntA(x)
Spell-out, Kaqchikel	Ø	*-Vn*	Ø	*-isa*	Ø	*-x*	*-i'*

CORE THEORETICAL CLAIMS AND CORROBORATING KAQCHIKEL EVIDENCE. Two claims are central to our analysis. (A) We advocate the split vP-VoiceP approach, whereby the extended verbal projection contains two separate levels with distinct functions. (B) We argue that the external argument can be merged in either of the two external positions made available by such a split structure: spec,vP or spec,VoiceP. Kaqchikel causative patterns offer novel empirical support for these two ideas.

A. The split vP-VoiceP structure captures the distribution of morphological causatives in Kaqchikel and offers a straightforward explanation for why its causativization is restricted to unergative and unaccusative predicates and does not apply to transitives (2). Causatives contain two separate projections: v_{Caus} and $Voice_{TV}$. v_{Caus} takes a saturated vP with an internal argument (v_{Unacc}) or a vP with a low external argument (v_{ITV}) as its complement and introduces a Causer role. $Voice_{TV}$ then projects a DP argument. While vP recursion is allowed, a vP cannot be merged on top of a VoiceP (*improper recursion*), hence, no transitive VoiceP can be further causativized (3). An analysis that blends vP and VoiceP together requires a more complex explanation of Kaqchikel causativization, especially since the restriction cannot be reduced to agentive vs non-agentive verbs, as both unaccusatives and unergatives can combine with the causative.

(2) X-e-q(a)-atin/war/*b'an-**isa**-j   ri   umul-a'.
PFV-ABS3PL-ERG1PL-bathe.ITV/sleep/do.TV-CAUS-DTV   DET   rabbit-PL
Acceptable: 'They washed the rabbits/made the rabbits sleep.'
Not available: 'They made the rabbits do/make it.'

(3) a. [$_{InflP}$ Infl [$_{VoiceP}$ DP [$_{Voice'}$ $Voice_{TV}$ [$_{vP}$ v_{Caus} [$_{vP}$ DP [$_{v'}$ v_{IT}V [$_{vP}$ V]]]]]]] – *unergative base*
b. [$_{VoiceP}$ DP [$_{Voice'}$ $Voice_{TV}$ [$_{vP}$ v_{Caus} [$_{vP}$ v_{Unacc} [$_{vP}$ V DP]]]]] – *unaccusative base*
c.*[$_{VoiceP}$ DP [$_{Voice'}$ $Voice_{TV}$ [$_{vP}$ v_{Caus} [$_{VoiceP}$ DP [$_{Voice'}$ $Voice_{TV}$ [$_{vP}$ v_{TV} [$_{vP}$ V DP]]]]]]] – *transitive base*

Assuming that v_{Caus} is similar to v_{TV}, we expect causative verbs to be able to undergo passivization. The prediction is borne out: the derivation is highly productive and applies to all acceptable causatives (4).

(4) X-Ø-kayi-**x** /   x-Ø-kam-isa-**x**   ri   äk'.
PFV-ABS3SG-die-CAUS-PASS   PFV-ABS3SG-sell-PASS   DET   rooster
'The rooster was sold/killed.'
[$_{InflP}$ Infl [$_{VoiceP}$ $Voice_{Pass}$ [$_{vP}$ $v_{Caus/TV}$ [$_{vP/VP}$ …]]]]] – *passivization*

B. External arguments are split across two VP-external projections; hence they are not structurally homogeneous: unergative subjects are merged in spec,vP (Actors), while transitive subjects are situated in the higher spec,VoiceP (Agents). Because ergative case is assigned by Voice, only arguments in spec,Voice are marked ergative. Unergative subjects (as well as most experiencer subjects) are low, merged in spec,v, and ergative case is therefore unavailable to them (see Polinsky 2016; Tollan 2018; Tollan & Massam 2022). We follow Tollan (2018) on the semantic differences between Actors and Agents, and Anand & Nevins (2006) on diagnostics of structural height of different external arguments. Allowing external arguments to be split across spec,VoiceP and spec,vP positions allows us to explain

a curious case of apparent causativization without the causative semantics, illustrated in (5): the intransitive/antipassive *chulun* can be causativized, however, no additional Causer is introduced and the meaning of *chulunisaj* is similar to that of the transitive *chuluj*.

(5) a. La yawa' x-Ø-chul-**un** / {x-Ø-u-chul-**uj** (ri) kik'}.
       DET patient PFV-ABS3SG-urinate-AP PFV-ABS3SG-ERG3SG-urinate-DTV DET blood
       AP *-un*: 'The patient urinated.'
       TV *-uj*: (i) 'The patient urinated blood.' (ii) 'The patient urinated over the (spilled) blood.'
   b. La yawa' x-Ø-u-chul-**un**-**isa**-j (ri) kik'.
       DET patient PFV-ABS3SG-ERG3SG-urinate-AP-CAUS-DTV DET blood
       Only: (i) 'The patient urinated over the blood.' Not: (ii) 'The patient urinated blood.'

We propose that (5b) involves a special Voice$_{Caus}$ (S: V) that Case-licenses the external argument and thus allows the internal argument to be projected and assigned ABS by the higher Infl. This functional head is spelled the same way as v$_{Caus}$, simply because the marker *-isa* is extended to all cases of "non-canonical" transitivity. Crucially, the external argument of the regular and "causativized" intransitive predicate (Actor) is merged in spec,vP, while the external argument of the transitive predicate (Agent) is in spec,VoiceP. This affects the semantic distribution of the verb, as only the truly agentive *chuluj* is compatible with a directly affected Substance argument.

THE INVENTORY AND PROPERTIES OF v AND VOICE. In our proposal, *v* can introduce a new argument (a new thematic relation) in semantics, even when it is not projected in syntax. Every *v* takes a (verbal) root projection as its complement (which we mark as VP). **Voice** does not introduce a new thematic relation; rather, it manipulates the pre-existing argument structure, particularly in terms of operating on the external argument, in the following way. (i) **Voice$_{TV}$** projects a DP to match an existing Agent relation; (ii) **Voice$_{Pass}$** existentially closes the external argument, and (iii) **reflexive Voice** projects an Agent DP identifying it with an existing internal argument variable (cf. Burukina 2019 on Kaqchikel, Ahn 2015 in more general terms). Accordingly, VoiceP is an optional layer that is only added to the structure when needed; that is, when the derivation without it either crashes in syntax, or cannot be interpreted at LF. Although in principle Voice$_{TV/Refl}$ can select an intransitive vP as its complement, the derivation violates the Theta Criterion (the DP in spec,VoiceP remains without a θ-role) and is uninterpretable at LF. This explains why unergative subjects are marked absolute even in ergative languages (ABS being assigned by Infl, cf. Coon et al. 2014), unless what appears to be unergative is actually a concealed transitive (cf. Hale & Keyser 1993). Likewise, passivization in Kaqchikel is restricted to transitives, because intransitive vPs are fully saturated. The derivation of a transitive clause is shown in (6): the Agent role is introduced by a specifier-less v$_{TV}$ but the external argument to fill it is projected by Voice$_{TV}$ (see also Anand & Nevins 2006; Tollan 2018 on high vs low external arguments). As indicated in (1), we assume that in Mayan Voices that project an external argument in the specifier position are equipped with a **Case** feature and assign ergative to the DP under a Spec-Head relation, in line with ERG-as-inherent accounts (Legate 2002; Aldridge 2004; Laka 2006; Coon 2013, a.o.)

(6) [$_{InflP}$ Infl [$_{VoiceP}$ DP [$_{Voice'}$ Voice$_{TV}$ [$_{vP}$ v$_{TV}$ [$_{VP}$ V DP]]]]]

The proposed approach accounts for all the patterns of v-Voice interaction attested in Kaqchikel, and captures the similarities between antipassives and unergatives (7); as we show, in both antipassives and unergatives, the internal argument is not introduced in the structure, and the Voice projection is absent.

(7) Ri Juana n-Ø-tzop-**in** / {n-Ø-kem-**on** (*jun potaj)} wakami.
    DET Juana IPFV-ABS3SG-jump-ITV IPFV-ABS3SG-weave-AP one blouse today
    'Juana is jumping/weaving today.'
    [$_{InflP}$ Infl [$_{vP}$ DP [$_{v'}$ v$_{ITV}$ [$_{vP}$ V]]]]

IMPLICATIONS. The proposed analysis is theoretically desirable in that it yields a uniform description of all Voices, including Voice$_{TV}$ and Voice$_{Pass}$ in terms of their selectional properties: they all combine with the same transitive vP, which introduces an Agent role but does not itself project an external argument. An alternative analysis whereby the external argument is generated in spec,vP (and only Case-licensed by a higher Voice) struggles to bring Voice$_{TV}$ and Voice$_{Pass}$ together: the former must take a fully saturated vP as its complement, but the latter can only select an "incomplete" unsaturated vP (cf. Bruening 2013). This gives rise to a further question about the general nature and the distribution of such "incomplete" vPs: Can an unergative vP be incomplete and, if so, why do unergatives in Kaqchikel resist passivization? In contrast, the proposed account that we have proposed is superior as it captures all the relevant data and does not overgenerate.