

Voice morphology and the features of transitivity¹

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Abstract

Ergative languages such as Niuean and languages with Austronesian-type voice morphology such as Tagalog show overt transitivity alternations based on not only the presence of an external argument but also the properties of the internal argument. In this paper, I propose that case assignment and overt voice alternations in these languages are different reflexes of the same interaction between the lexical features of Voice and the distribution of valued φ -features in the syntax. The result is an expanded system of Voice, varying along two dimensions: (i) external argument introduction, which is lexically specified on Voice, and (ii) the presence of a valued φ -feature, which is derived on Voice through feature sharing with lower verbal functional heads. The analysis presented for simple transitives in Austronesian-type voice languages is extended to account for productive causatives in Austronesian, which are proposed to involve Voice over Voice, as well as voice morphology in nominative–accusative languages such as Japanese.

Keywords Voice; transitivity; ergativity; Austronesian; case

1 Introduction

In languages with more than one semantically transitive construction, one of these constructions often requires a particular kind of internal argument. In Niuean (Polynesian), for example, transitive constructions with ergative subjects must also have an absolutive object (1a), while unmarked objects give rise to absolutive subjects (1b).²

(1) Niuean

a. Ne inu e Sione e kofe.
PAST drink **ERG.P** Sione ABS.C coffee
'Sione drank the coffee.'

(Massam 2000: 98)

b. Ne inu kofe kono a Mele.
PAST drink coffee bitter **ABS.P** Mele
'Mele drank bitter coffee.'

(Massam 2001: 158)

In Puyuma (Formosan), a language with Austronesian-type voice morphology, Patient Voice (PV) morphology on the verb is limited to transitive constructions with a nominative object (2a), while Agent Voice (AV) morphology can occur with an oblique object or no object at all (2b).

(2) Puyuma

a. tu=trakaw-aw na paisu kan Isaw.
3.GEN=steal-**PV** NOM.DEF money OBL.SG Isaw
'Isaw stole the money.'

b. trakaw (dra paisu) i Isaw.
<**AV**>steal OBL.IND money NOM.SG Isaw
'Isaw stole money/something.'

(Teng 2007: 81)

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² Notation and abbreviations: <> infix, ~ initial reduplication, = clitic, / portmanteau, 1 first person, 3 third person, ABS absolutive case, ACC accusative, ANTICAUS anticausative, AP antipassive, AV Agent Voice, BEN beneficiary, C common noun, CAUS causative, CV Circumstantial Voice, CIRC circumstantial applicative, DEF definite, GEN genitive case, ERG ergative case, IND indefinite, INDIC indicative, INSTR instrumental applicative, LV Locative Voice, NOM nominative case, NONACT nonactive, OBL oblique case, P proper noun, PART participle, PERF perfective, PL plural, POSS possessive, PV Patient Voice, SG singular.

Table 1 Typology of lexical and derived Voice feature interaction

	Derived		
	Valued φ	Unvalued φ	
Lexical	[+D]	1	2
	[-D]	3	*
	Unspecified	4	(*)

The similarity between the patterns in (1) and (2) has garnered many attempts to characterise languages with Austronesian-type voice morphology as ergative (DeGuzman 1976; Payne 1982; Gerdts 1983; Aldridge 2004, 2012). However, the status of ergativity in such languages remains debated (Maclachlan 1996; Paul and Travis 2006; Erlewine et al. 2017). In this paper, I show that the parallel between ergative case assignment and Austronesian-type voice morphology is explained if they derive from the same notion of syntactic transitivity, such that the above (a) constructions represent different reflexes of the same syntactic configuration. In particular, I argue that ergative languages and Austronesian-type voice languages exhibit the same kind of interaction between the lexical features of Voice and valued φ -features derived from its sister *v*P. This paper proposes a unified approach to this interaction.

Recent work in the domains of argument structure and verb morphology (Alexiadou et al. 2006, 2015; Pykkänen 2008; Schäfer 2008; Harley 2009, 2013, 2017; Legate 2014; Wood 2015) has argued for the distinctness of the external argument-introducing head Voice (Kratzer 1996) and the verbalising head *v* (Marantz 1997). Voice has additionally been suggested to come in three lexical variants (Kastner 2016, 2017; Oseki 2017): (i) [+D], requiring a DP to merge as its specifier, as in transitive predicates; (ii) [-D], prohibiting a specifier, as in unaccusative predicates; and (iii) unspecified Voice, compatible with or without a specifier, as in anticausatives.³ These three variants of Voice are motivated by evidence primarily from their overt realisation but also from the thematic interpretation of their external arguments.

Languages such as Puyuma, however, show overt morphological distinctions based on not only the three lexical features of Voice, which deal exclusively with the external argument, but also the properties of the internal argument inside the *v*P. In this paper, I propose that ergative case assignment in ergative languages and Austronesian-type voice alternations are consequences of the interaction between the lexical features of Voice and the distribution of valued φ -features in the syntax, building on Deal's (2010) φ -based approach to ergativity. Nominals bear two valued features, D and φ , which can agree with and value their unvalued counterparts on the verbal functional heads *v*, Appl and Voice (Pykkänen 2008). D-agreement with a functional head results in abstract licensing of a nominal, while φ -agreement additionally makes the nominal eligible for overt phi-agreement on the verb and special interpretation. All nominals must be licensed (via D-agreement), and at least one nominal in a clause must also undergo φ -agreement. A φ -feature on lower verbal heads (e.g. *v* and Appl) that is valued during the derivation is able to value the φ -feature on Voice via a mechanism of feature sharing (Pesetsky and Torrego 2007); in this way, the valued φ -feature of a lower nominal may be derived on Voice.

The result of my proposal is an expanded system of Voice, varying along two dimensions: (i) external argument introduction, which is lexically specified on Voice, and (ii) the presence of a valued φ -feature, which is derived on Voice through feature sharing with lower verbal heads. Using evidence from the spell-out and case assignment properties of Voice, I will show that ergative languages and languages with Austronesian-type voice morphology make the four distinctions given in the proposed typology of Voice in Table 1. I propose that the Niuean ergative construction (1a) and Puyuma Patient Voice construction (2a) both reflect Type 1 Voice: Voice[+D] with a valued φ -feature of a lower nominal. I show that Voice is sensitive specifically to φ rather than nominal licensing itself, which contributes a D-feature but not a φ -feature. That is, Voice is only sensitive to φ -based transitivity. My approach will thus provide a unified account of ergative case and voice morphology as a reflex of Voice features, and of absolutive and Austronesian-type nominative/pivot marking on nominals as a reflex of φ -agreement. Assuming that at least one nominal in a clause must undergo φ -agreement, featural combinations that do not derive clauses with at least one φ -agreed nominal are ruled out, indicated by *. Unspecified Voice with unvalued φ is marked (*) as it must occur alongside another φ -agreeing head, such as T.

The paper is structured as follows. §2 provides evidence that voice and case alternations in Austronesian-type voice systems and case and agreement patterns in ergative languages are consequences of the interaction between the lexical features of Voice and valued φ -features derived from an argument within its sister *v*P. In §3, I present the details of my analysis, proposing that nominals bear two valued features: D, which is responsible for abstract licensing, and φ , the distribution of which gives rise to the featural Voice alternations responsible for ergative case assignment and voice morphology in Austronesian-type voice languages. §4 turns to the structure of productive causatives in Austronesian, which I suggest involve Voice over Voice, subject to featural restrictions reminiscent of the distinction between *faire-infinitif* and *faire-par*

³ This featural system distinguishes anticausatives, which participate in the causative alternation, from unaccusatives, which do not (Alexiadou et al 2006, 2015; Schäfer 2008).

causatives in Romance (Kayne 1975). Looking beyond Austronesian, in §5 I show that the proposed typology of Voice also provides an approach to nominative–accusative languages, with a focus on Japanese. §6 concludes the paper.

2 Voice and case

The literature on the lexical features of Voice has thus far concentrated on nominative–accusative languages (Alexiadou et al. 2006, 2015; Schäfer 2008; Wood 2015). Recent investigations into Hebrew (Kastner 2016, 2017) and Japanese (Oseki 2017) have indicated the need for three lexical specifications of Voice. Kastner (2016, 2017), for instance, shows that Hebrew verbs in the *heXYiZ* template have an external argument (3b), while verbs in the *niXYaZ* template have no external argument (4a), diagnosed by tests such as the phrase *me-atsmo* ‘by itself’ (Levin and Rappaport Hovav 1995; Alexiadou and Doron 2012). Kastner proposes that the *heXYiZ* template spells out Voice[+D], which requires a DP specifier, and the *niXYaZ* template spells out Voice[−D], which prohibits a specifier.

(3) Hebrew

- a. ha-marak **ratax** (me-atsmo).
the-soup boiled from-itself
‘The soup boiled (of its own accord).’ *XaYaZ*
- b. ha-jeled **hertiax** et ha-marak.
the-boy boiled ACC the-soup
‘The boy boiled the soup.’ *heXYiZ*

- (4) a. ha-ja’ar **niftax** (me-atsmo).
the-gate opened from-itself
‘The gate opened (of its own accord).’ *niXYaZ*
- b. josi **patax** et ha-ja’ar.
Yossi opened ACC the-gate
‘Yossi opened the gate.’ *XaYaZ*
- (adapted from Oseki and Kastner 2017: 2)

The *XaYaZ* template, by contrast, can occur with an external argument (4b) or without one (3a), suggesting that Voice in *XaYaZ* constructions is unspecified for external arguments (Doron 2003; Arad 2005; Borer 2013). Therefore the patterns of external argument introduction in Hebrew can be captured by positing three lexical features of Voice: [+D], [−D] and unspecified.

In this section, I present evidence from Austronesian-type voice systems (§2.1) and ergative languages (§2.2) that the spell-out and case-assigning properties of Voice arise from the interaction between the lexical features of Voice and the features of lower arguments. I propose two valued features on nominals, D and φ , which capture the difference between oblique and unmarked arguments on the one hand and nominative and absolutive arguments on the other. I argue that Patient Voice constructions in Austronesian-type languages and ergative transitive constructions in ergative languages both involve Voice[+D] that bears the φ -feature of a lower argument.

2.1 Austronesian voice and case

Like Hebrew, languages with Austronesian-type voice and case systems also provide overt morphological evidence for three lexical features of Voice. In Puyuma (Formosan), Voice[+D], which I assume licenses the external argument in unergative and transitive predicates, is spelled out with the Agent Voice infix (5a). Voice[−D], which does not license an external argument, as in unaccusative predicates, is unmarked (5b). Intransitive subjects always bear nominative case in Puyuma.

(5) Puyuma

- a. sa~senay i baeli.
<AV>~sing NOM.SG my.elder.sibling
‘My elder sister is/was singing.’ (Teng 2007: 68)
- b. drua nantu lalak.
come NOM.DEF.3.POSS child
‘Her child came.’ (Teng 2007: 222)

As shown in (6), the non-active prefix *mu-* may occur with or without an external causer argument (Chen and Fukuda 2017).⁴ This suggests that *mu-* is a reflex of unspecified Voice, which is lexically unspecified for an external argument; if present, the external argument is generally interpreted as a causer (Schäfer 2008; Wood 2015).

(6) Puyuma

mu-atel la na ladru (dra balri).
NONACT-fall PERF NOM.DEF mango OBL.IND wind

‘The mango fell. / Wind made the mango fall.’

(Chen and Fukuda 2017: 5)

However, Austronesian-type voice systems also exhibit transitive voice alternations, which point to the need for a finer-grained system than a three-way typology of Voice.⁵ In Puyuma, as in other languages with Austronesian-type voice alternations, voice morphology tracks what is called the pivot (Foley and van Valin 1984), which is always marked with nominative case and receives a definite/specific interpretation. As a result, the transitive clauses in (7) all involve Voice[+D] but each receives a different voice marker. Agent Voice marking, for example, appears on the verb when the pivot is the agent of the clause (7a), while Patient Voice marking appears when the pivot is a theme or patient (7b). Locative Voice appears with source or goal pivots (7c). In the Circumstantial Voice, the pivot may express a range of thematic roles, including beneficiary and instrument (7d). All non-pivot arguments in Puyuma are preferentially interpreted as indefinite and marked with oblique case; oblique subjects may be doubled with a genitive clitic (7b–d).

(7) Puyuma

a. tr<**em**>akaw dra paisu i Isaw.
<**AV**>steal OBL.IND money NOM.SG Isaw

‘Isaw stole money.’

Agent Voice

b. tu=trakaw-**aw** na paisu kan Isaw.
3.GEN=steal-**PV** NOM.DEF money OBL.SG Isaw

‘Isaw stole the money.’

Patient Voice

c. tu=trakaw-**ay**=ku dra paisu kan Isaw.
3.GEN=steal-**LV**=1 SG.NOM OBL.IND money OBL.SG Isaw

‘Isaw stole money from me.’

Locative Voice

d. tu=trakaw-**anay** i tinataw dra paisu kan Isaw.
3.GEN=steal-**CV** NOM.SG his.mother OBL.IND money OBL.SG Isaw

‘Isaw stole money for his mother.’

Circumstantial Voice

(Teng 2007: 81)

Notice that Puyuma Agent Voice marking appears in both the transitive clause in (5a), which has an oblique theme, and the unergative clause in (7a), which has no theme at all. Voice[+D] is therefore always spelled out as Agent Voice when the agent is the pivot, regardless of the total number of arguments in the clause. Thus the realisation of voice morphology in Puyuma depends on both the lexical features of Voice and the grammatical function of the pivot argument. Specifically, Voice[+D] is spelled out as Patient Voice or Agent Voice according to whether its lower argument is the pivot, or nominative-marked argument. Setting aside for now the Locative Voice and Circumstantial Voice constructions, which I assume involve an applicative head in addition to Voice (Rackowski 2002), this state of affairs is summarised in Table 2.

The alternation between Patient Voice and Agent Voice suggests that the spell-out of Voice depends on the presence of a nominative lower argument. That is, in the Patient Voice construction, Voice must be able to ‘see’ a nominative argument within its sister *vP*. If there is no lower argument, or there is one but it is not the pivot, Agent Voice marking surfaces. This contrast may be formalised in the following way. I propose to distinguish two nominal features, D and φ , which emerge from the lexicon valued on nominals and unvalued on the functional heads that constitute the extended projection of a verb: *v*, Appl or Voice (Pylkkänen 2008). A nominal is licensed and assigned case by agreeing with one or more unvalued features on a functional head; each unvalued feature is valued via agreement (Chomsky 2000, 2001). In languages with Austronesian-type voice and case marking, a nominal that agrees in and values only the D-feature with a verbal head is assigned oblique case, while a nominal that agrees in and values both D and φ is assigned nominative case. I assume that objects are licensed

⁴ Teng (2007) classifies the *mu-* prefix as an anticausative marker. However, since *mu-* can occur with and without an external argument, I gloss it as non-active voice morphology.

⁵ Lowercase ‘voice’ and uppercase ‘Voice’ with an uppercase modifier, e.g. ‘Agent Voice’, are used descriptively to refer to overt verbal morphology. Plain uppercase ‘Voice’ refers to the syntactic head.

Table 2 Voice marking in Puyuma

Voice marking	Voice feature	Lower argument
Patient Voice <i>-aw</i>	[+D]	NOM
Agent Voice < <i>em</i> >	[+D]	OBL / \emptyset
Unmarked	[-D]	NOM
Non-active <i>mu-</i>	Unspecified	NOM

through agreement with *v*, applied arguments are licensed by Appl and agents are licensed by Voice in Austronesian-type voice languages. The φ -feature of a lower argument is derived on Voice through a mechanism of feature sharing; Voice may therefore have distinct realisations according to its lexical external argument specification ([+D], [-D] or unspecified) as well as its derived φ -feature specification (unvalued or valued). In Puyuma, Voice[+D] with a valued φ -feature is spelled out as Patient Voice, while Voice[-D] with unvalued φ is spelled out as Agent Voice.

My claim, then, is that transitive voice morphology distinctions arise as a consequence of the distribution of φ -features in the syntax. There is precedent for this perspective in the literature on case and agreement. Austronesian-type voice systems frequently come with animacy and specificity restrictions on nominals (Maclachlan 1996; Aldridge 2004) that are reminiscent of differential object marking (DOM), which has case and agreement-related effects in many languages (Comrie 1979; Aissen 2003). For example, in her recent analysis of DOM in Neo-Aramaic, Kalin (to appear) assumes, following Chomsky (2000, 2001), that definite/specific nominals are licensed via φ -agreement with a licensing head. Carstens (2001) also shows from multiple agreement phenomena in Bantu that the φ -features involved in the licensing of nominals are active elsewhere in the syntax and may be spelled out overtly on all verbal heads in a clause. In the current proposal for Austronesian, D-agreement licenses indefinite/non-specific nominals, which are marked oblique, and φ -agreement licenses definite/specific nominals, which are marked nominative; however, the spell-out of Voice is sensitive to φ - but not D-agreement.⁶

2.2 Ergative case

In the previous section, it was proposed that Austronesian-type voice systems reflect the interaction between the lexical specification of Voice and nominal features derived from its sister *v*P. Patient Voice marking is spelled out when Voice[+D] has a valued φ -feature. In this section, I argue that ergative case assignment occurs in the same transitive configuration, satisfied by an absolutive direct object or an applicative.

Ergative case refers to nominal marking that is normally restricted to subjects of transitive clauses. In Niuean (Polynesian), for example, intransitive subjects always surface with overt absolutive case, whether it is an unergative (8a), unaccusative (8b) or anticausative (8c), characterised as such by being able to participate in the causative alternation. Transitive subjects are marked with ergative case (8d).

(8) Niuean

a. Kua koli **a** ia.
 PERF dance **ABS.P** 3.SG
 ‘She danced.’

b. Kua mokulu **e** tau fua mago.
 PERF fall **ABS.C** PL fruit mango
 ‘The mangoes fell.’

(Massam 2016: 3)

c. Kua ma-lipi **e** lupu.
 PERF ANTICAUS-break **ABS.C** bottle
 ‘The bottle is broken. / The bottle broke.’

(Sperlich 1997: 184)

d. Kua koli **he** tau fanau e koli fefeua.
 PERF dance **ERG.C** PL children ABS.C dance funny
 ‘The children danced a funny dance.’

(Massam 2016: 3)

Crucially, however, it is not the mere presence of a lower argument that conditions the assignment of ergative case on the subject. Rather, the internal argument must be absolutive, shown underlined in (9a). Unmarked, non-specific objects in Niuean, as in (9b), bleed ergative case on the subject.

⁶ Van Urk (2015) shows that Dinka Bor (Nilotic) has a system of voice markers that pattern strikingly similarly to those found in Austronesian languages. Unusually for languages with Austronesian-type voice morphology, however, finite verbs in Dinka also agree in person and number with the pivot; this is further evidence that the spell-out of Voice is sensitive specifically to the φ -feature of nominals.

Table 3 Ergative case in Niuean

Construction	Ergative subject	Voice feature	Lower argument
Ergative transitive	Yes	[+D]	ABS
Non-ergative transitive	No	[+D]	OBL
Unergative	No	[+D]	—
Unaccusative	No	[−D]	ABS
Anticausative	No	Unspecified	ABS

(9) Niuean

- a. Ne inu e Sione e kofe.
 PAST drink **ERG.P** Sione ABS.C coffee
 ‘Sione drank the coffee.’

(Massam 2000: 98)

- b. Ne inu kofe kono a Mele.
 PAST drink coffee bitter **ABS.P** Mele
 ‘Mele drank bitter coffee.’

(Massam 2001: 158)

In (9b), the direct object is said to have undergone pseudo noun incorporation with the verb (Massam 2001). I do not appeal to any particular theory of incorporation here but will assume that (9b) is transitive; that is, the object is licensed, but as an oblique argument. (9a) can therefore be referred to as an ergative transitive construction and (9b) as a non-ergative transitive construction. Table 3 summarises the distribution of ergative case marking in Niuean across construction types: only clauses with Voice[+D] and an absolutive lower argument may have ergative subjects.

As in Niuean, non-absolutive objects in Eastern Canadian Inuktitut (Eskimo-Aleut) also prevent the assignment of ergative case on the subject. Ergative subjects in Inuktitut co-occur with absolutive objects and both subject and object agreement on the verb in (10a). Oblique objects such as in the antipassive construction in (10b), however, neither trigger ergative case on the subject nor control object agreement.⁷

(10) Eastern Canadian Inuktitut

- a. anguti-**up** arnaq kunik-**taa**.
 man-**ERG** woman(.ABS) kiss-PART.3SG/3SG
 ‘The man kissed the woman.’

- b. anguti kunik-si-vuq arna-mik.
 man(.ABS) kiss-AP-INDIC.3SG woman-OBL
 ‘The man is kissing a woman.’

(Spreng 2012: 13)

Thus, while the non-absolutive objects in (9b) from Niuean and (10b) from Inuktitut are both licensed to appear in their respective clauses, neither satisfies the transitivity restriction on ergative case—and object agreement, for Inuktitut.⁸ Rather, ergative transitive constructions in both languages are only possible when the clause contains Voice[+D] and an absolutive lower argument.

The difference between absolutive and oblique arguments in ergative languages can be characterised using the same two nominal features, D and φ , proposed in §2.1 for Austronesian-type languages. I assume that all nominals must agree with a verbal functional head in one or more features in order to be licensed. Objects that only agree with v in D-feature are assigned oblique case, while objects that agree with v in both D and φ are assigned absolutive case and may control object phi-agreement on the verb. I adopt Deal’s (2010) proposal that ergative case is spelled out on the subject if Voice can ‘see’ the φ -feature of a direct argument. In my approach, this is accomplished through φ -feature sharing between heads along the extended projection of the verb. The v head, for instance, shares with Voice its φ -feature valued through agreement with an object, thereby deriving on Voice the valued φ -feature of the object.

Given these assumptions, the transitivity requirement for ergative case can be formulated in the following way: ergative case is assigned to the specifier of Voice[+D] that bears the valued φ -feature of a lower argument. Ergative transitive constructions require Voice[+D] to bear valued φ , while non-ergative transitive constructions involve Voice[+D] with unvalued φ . Thus Voice[+D] with a valued φ -feature produces the Patient Voice construction in Austronesian-type voice systems and the ergative transitive construction in ergative languages.

⁷ The Inuktitut antipassive marker *-si-* has at least two other uses: (i) as a reflexive (Marantz 1984; Bok-Bennema 1991) and (ii) as an inceptive marker on unergative verbs (Johns 2006; Spreng 2012), which suggests that it is not a spell-out of Voice.

⁸ Languages with both subject and object agreement are discussed in §3.4.

Absolutive applicatives also condition ergative case on the subject in Niuean. An unergative subject is normally marked absolutive in Niuean (11a) but surfaces as ergative with the addition of an instrumental applicative into the clause (11b).

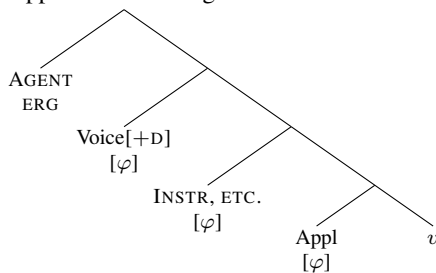
(11) Niuean

- a. Ne tohitohi **a** Sione.
 PAST writing **ABS.P** Sione
 ‘Sione is writing.’
- b. Ne tohitohi aki **e** Sione e pene.
 PAST writing INSTR **ERG.P** Sione ABS.C pen
 ‘Sione is writing with the pen.’

(Massam 1998: 5)

Applicatives also behave like objects for the purposes of overt phi-agreement in ergative languages that have it (Baker and Bobaljik 2017; Deal 2017). Thus both objects and applied arguments can serve as direct arguments; that is, both types can satisfy the transitivity requirement on ergative case assignment and control overt object agreement. In the current approach, this means that in (11b) it is the φ -feature of the applied argument that is made accessible to Voice. I propose that, like *v*, the Appl head is able to φ -agree with the argument it introduces. Voice has access to the φ -features of both objects and applicatives, because *v*, Appl and Voice constitute functional heads along the extended projection of the verb (Wood and Marantz 2017). The high applicative structure I assume for applicatives of unergatives like (11b) is sketched in (12), based on Pykkänen (2008). Voice[+D] bears a valued φ -feature from the applied argument and therefore assigns ergative case to its specifier.

(12) Applicative of unergative



In some languages, applicatives can trigger ergative case even on unaccusative subjects (Baker 2014; Baker and Bobaljik 2017; Deal 2017). In Kalaallisut (Eskimo-Aleut), the unaccusative subject is absolutive on its own (13a) but becomes ergative in the presence of an applicative (13b), which controls object agreement.

(13) Kalaallisut

- a. kamap-p-**uq**.
 be.angry-INDIC-3SG.**ABS**
 ‘He/she is angry.’
- b. arna-**p** angut kama-ap-p-aa.
 woman-**ERG** man(.**ABS**) be.angry-**APPL**-INDIC-3SG/3SG
 ‘The woman is angry with the man.’

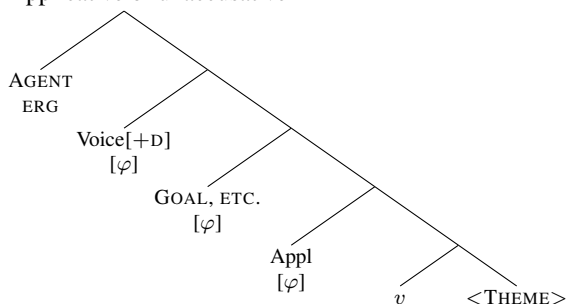
(Baker and Bobaljik 2017: 117)

In the current approach, ergative case is assigned to the specifier of Voice[+D] with a valued φ -feature. I suggest that after the applicative contributes its φ -feature to Voice[+D], the theme raises to the specifier of Voice[+D], where it is assigned ergative case.⁹ I therefore assume that the requirement that Voice[+D] have a specifier can be satisfied by an argument that has moved from below.¹⁰ The resulting configuration, sketched in (14), is an ergative construction akin to the one given in (12).

⁹ In Deal’s (2017) analysis of Nez Perce applicatives of unaccusatives, the theme raises to the specifier of a non-thematic unaccusative Voice that obligatorily bears an EPP feature; this Voice head thus appears syntactically equivalent to my Voice[+D].

¹⁰ For a solution to the problem of why it is the theme and not the applicative that raises to the specifier of Voice, see Deal’s (2017) account based on Anti-Locality.

(14) Applicative of unaccusative



In sum, in this section I showed that the Patient Voice construction in Austronesian-type voice systems and the ergative transitive construction in ergative languages involve the same transitive configuration: Voice[+D] with a valued φ -feature. I also demonstrated that this φ -feature may come from a direct object or an applied argument, suggesting that the syntax is sensitive to the distribution of valued φ -features, rather than the identity of these arguments themselves.

3 Proposal

In this section, I present my proposal for the interaction between Voice and the nominal features shared by its sister vP . I first lay out the theoretical assumptions of my analysis (§3.1) and then propose an account of ergative case assignment in which only Voice[+D] with a valued φ -feature may assign ergative case to its specifier (§3.2). I show that the same approach captures the overt distinctions made by Austronesian-type voice and case systems (§3.3). Finally, I discuss alternative analyses, which I show do not predict the attested case and voice morphology patterns (§3.4).

3.1 Theoretical assumptions

My proposal adopts the basic assumptions of Distributed Morphology (Halle and Marantz 1993) and Minimalist syntax (Chomsky 1995, 2001), in which structure is built solely by the syntax and then spelled-out by the (morpho)phonological component at PF and interpreted by the semantic component at LF. I assume a non-deterministic view of the syntax, in which ill-formed derivations are ruled out by filters, such as the EPP.

3.1.1 Features of Voice

I assume, following previous work (Alexiadou et al. 2006, 2015; Schäfer 2008; Wood 2015; Kastner 2016, 2017; Oseki 2017), that languages may have up to three lexical variants of Voice. I adopt the system of Voice developed by Kastner (2016), who discusses in detail the syntactic and semantic properties of Voice[+D], Voice[−D] and unspecified Voice, also called expletive Voice (Schäfer 2008; Wood 2015). I outline here only those assumptions relevant to the current proposal.

Voice[+D] requires that a DP argument merge in its specifier. This is formalised by assuming that Voice[+D] bears an unvalued nominal feature (call it D) that must be valued by the corresponding valued feature on a nominal in a specifier-head configuration with Voice[+D]. The default semantic contribution of Voice[+D] is given in (15), which states that Voice[+D] introduces an agent argument to an event.¹¹ I assume that the syntax itself does not contain or manipulate thematic information, but thematic interpretation takes place post-syntactically at LF, notated in small caps.

$$(15) \llbracket \text{Voice}[+D] \rrbracket \leftrightarrow \lambda e \lambda x. \text{AGENT}(x, e)$$

Voice[+D] introduces the external argument in transitive and (lexical) causative constructions. I suggest that unergative subjects are also introduced by Voice[+D] in Austronesian-type languages.¹²

Voice[−D], by contrast, prohibits DPs from merging in its specifier. Syntactically, Voice[−D] cannot agree in D-feature with a specifier and therefore cannot license one. Semantically, Voice[−D] does not introduce an argument but rather is interpreted as an identity function that expects a predicate of events, given in (16).

¹¹ I assume that Voice[+D] permits an argument to be raised into its specifier position from below in languages that allow applicatives of unaccusatives (§2.2); if the raised argument has already been assigned a thematic interpretation, Voice[+D] does not assign it another.

¹² This may differ across languages; see the analysis of Japanese in Oseki (2017).

Table 4 Trivalent Voice system

Voice	Permits EA	Licenses EA	Default interpretation of EA
[+D]	Yes	Yes	Agent
[-D]	No	No	–
Unspecified	Yes	No	Causer

$$(16) \text{ [[Voice[-D]]} \leftrightarrow \lambda P_{\langle s,t \rangle}.P$$

Voice[-D] is found in unaccusatives, in certain types of passives (Legate 2014; Oseki 2017) and in other non-active constructions (Alexiadou and Doron 2012; Spathas et al. 2015; Wood 2015).

Unspecified or expletive Voice is compatible with both the presence and the absence of a DP in its specifier. Unspecified Voice therefore has more than one semantic interpretation; it is subject to allosemy, or semantic interpretation based on its structural context (see Marantz 2013; Wood 2015; Myler 2016). When there is no DP in its specifier, unspecified Voice is interpreted as an identity function that expects a predicate of events, like Voice[-D] (17). In the context of a DP in its specifier, however, unspecified Voice is interpreted as introducing that DP as a thematic causer (18). Unspecified Voice is thus interpreted in anticausatives as (17) and in some lexical causative constructions as (18).¹³

$$(17) \text{ [[Voice]]} \leftrightarrow \lambda P_{\langle s,t \rangle}.P$$

$$(18) \text{ [[Voice]]} \leftrightarrow \lambda e \lambda x. \text{CAUSER}(x,e) / \text{DP} \text{ ___}$$

I assume that unspecified Voice does not agree in D-feature with its specifier. Thus while unspecified Voice provides a thematic interpretation for a nominal that occurs in its specifier, unspecified Voice cannot license the nominal syntactically. The nominal must be licensed by other means, such as by Tense.

Thus the three types of Voice differ in (i) whether they permit an external argument (EA) in its specifier, (ii) whether they license the external argument syntactically, and (iii) what default interpretation the external argument, if there is one, receives. This is summarised in Table 4.

3.1.2 Extended *vP* projection

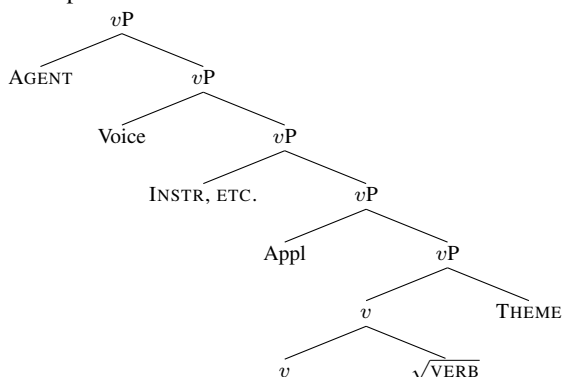
Like Voice, the high applicative head Appl also has the ability to introduce external arguments, such as beneficiaries and instruments (Pylkkänen 2008). Yet like direct objects, which are assumed to merge as the sister of and be licensed by *v*, which turns category-less roots into verbs (Marantz 1997), applied arguments also behave as direct arguments for the purposes of transitivity. Recall from §2.2 that in ergative languages, Voice may only assign ergative case to its DP specifier if Voice bears the valued φ -feature of a direct argument, including both objects and applicatives, as well as causees in causatives (see §4).

The original conceptions of Appl and Voice involved both heads projecting their own labels (Kratzer 1996; Pylkkänen 2008), resulting in *vP*, ApplP and VoiceP shells along the extended projection of the verb—a notion due to Grimshaw (1990). However, these phrasal labels obscure the fact that, semantically, Appl and Voice simply add participants to an event denoted by *vP*. Furthermore, these labels do not capture the parallels between direct arguments, i.e. objects and applicatives, for the purposes of transitivity. Ergative-assigning Voice can take a range of sister constituents, as long as they bear the correct nominal licensing features. In other words, the case-assigning properties of Voice are determined in the same way regardless of whether Voice merges with *vP*, ApplP or VoiceP (in the case of causatives; see §4) as its sister.

Wood and Marantz (2017) therefore argue that Appl and Voice are not distinct lexical categories but variants of a single relational head *i** that (i) merges as the sister of *vP*, (ii) relates an external argument to the event denoted by *vP* and (iii) projects the label of *vP*. In their approach, the only difference between the Appl variant and the Voice variant of *i** in the syntax is that Appl involves a prepositional root adjoined to *i**, which restricts the thematic interpretation of its specifier, while Voice has no prepositional root.¹⁴ I use the derived labels Appl and Voice in this paper for the purposes of clarity and adopt the assumption that Appl and Voice merge as the sister of *vP* and project its label. This approach unifies the behaviour of what Pylkkänen (2008) labels *vP*, ApplP and VoiceP, capturing the fact that they are treated identically by Voice for the purposes of ergative case assignment. One possible structure given these assumptions for the extended projection of *vP* is illustrated in (19), which gives the basic syntactic and semantic properties of the derivation of a transitive clause with an applicative. Semantic information is computed post-syntactically, in small caps.

¹³ I assume that unspecified Voice in Austronesian-type voice languages can only occur in the context of an internal argument. However, in languages in which unspecified Voice introduces the unergative subject, such as Japanese (§5), the specifier of unspecified Voice may receive an agentive interpretation.

¹⁴ The three lexical distinctions assumed for Voice may therefore be a more general property of *i**. Appl might then also be expected to vary in its feature specifications. I focus only on Appl[+D] in this paper and abbreviate it as plain ‘Appl’ for simplicity.

(19) Example extended *vP* structure

Syntactic trees henceforth will not include the verb root, for the sake of simplicity.

The result of the extended *vP* labeling assumption is that Appl and Voice are neither heads nor adjuncts in the standard sense, and that the notion of ‘specifier’ will also need to be re-defined in my system. I propose generalised definitions of head and c-selection in (20) and (21) and specifier in (22). The syntactic properties common to Appl and Voice are stated in (23).

- (20) X is a head if it has at least one unvalued category feature F. X is said to c-select for category F.
- (21) Y satisfies a c-selectional restriction on X if Y bears the valued counterpart to an unvalued category feature on X.
- (22) Y is the specifier of X if Y satisfies a c-selectional restriction on X and is the sister to the mother of X.
- (23) Appl and Voice are relational heads that:
- are unvalued for the category feature *v* obligatorily and D optionally, and
 - merge as the sister of *vP* and project the label of *vP*.

The features [*v*] and [D] are valued on *vP* and DP, respectively. Thus Voice[+D], for example, takes *vP* as its sister and a DP as its specifier.

3.1.3 Features of *vP*

My analysis proposes that there are two nominal licensing features, D and φ , which are valued on nominals but unvalued on nominal licensers, which include *v*, Appl and Voice. This D-feature is related to but distinct from that discussed in §3.1.1 for Voice[+D], such that Voice[+D] bears two sets of unvalued features: (i) D and φ that can be valued by a specifier and (ii) D and φ that can be valued by a lower argument. All nominals must undergo D-agreement with a functional head that is unvalued for D in order to be licensed. Unvalued features may be valued in the syntax through the operation Agree. When a direct object, for example, merges as the sister of *v*, it values the previously unvalued D-feature on *v*. D-agreement is obligatory for nominals and functions as abstract licensing.

All nominals also bear a valued φ -feature, but not all undergo φ -agreement with a licenser. Nominals are assigned case as a consequence of agreement in D-feature only or both D- and φ -feature with a licenser.¹⁵ In languages with Austronesian-type voice morphology, discussed in §2.1, only one nominal can be the pivot, tracked by voice marking and nominative case. I propose that only nominals that undergo φ -agreement with a functional head (thereby valuing the φ -feature on that head) are eligible to be pivots. That is, a nominal that φ -agrees with a functional head (i) surfaces with nominative or absolutive case and (ii) has the potential to control overt phi-agreement and receive special pivot interpretation. D-only agreement results in oblique marking in Austronesian-type languages. Thus the proposed system establishes a featural distinction between the licensing of nominals (via D-agreement) on the one hand, and phi-agreement and determination of the pivot (via φ -agreement) on the other. Not every licenser will have all of its features valued; I assume that unvalued features do not cause the derivation to crash (Preminger 2011).

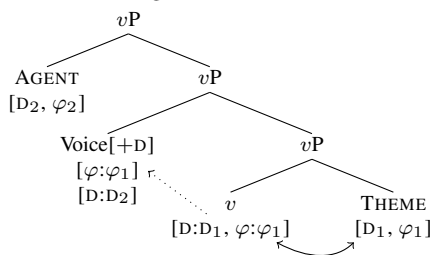
In §2, it was shown that Voice is able to ‘see’ whether a direct argument has agreed with and valued the φ -feature on either *v* or Appl. This can be achieved by giving Voice access to valued φ -features on *v* and Appl, rather than the features on the nominals themselves. To capture this interaction, I adopt a mechanism of *vP*-internal feature sharing, which I assume

¹⁵ Forbes (2017) similarly proposes that absolutive agreement in the ergative language Gitksan (Tsimshianic) can probe for either a subset or the full set of features borne on nominals.

occurs via Agree (Pesetsky and Torrego 2007; Danon 2011) but also via Merge (Sigurðsson 2017). Feature sharing allows a head with a lexically unvalued feature that is valued in the syntax to share its value with other heads with the same unvalued feature. Syntactic mechanisms like feature sharing are needed within the *v*P to account for phenomena such as multiple agreement in Bantu, in which the φ -features of a nominal are spelled out overtly on all verbal heads in a clause (Carstens 2001). I assume that φ -features may participate in feature sharing but D-features are only involved in nominal licensing; thus φ -features trigger voice alternations but D-features do not.

(24) illustrates feature sharing between *v* and Voice[+D], which emerge from the lexicon with unvalued D- and φ -features. In this derivation, the Theme merges with and undergoes both D- and φ -agreement with *v*, valuing the D- and φ -features of *v*. When Voice[+D] merges with the resulting constituent, *v* shares its now-valued φ -feature with Voice[+D], thereby also valuing the φ -features of Voice[+D]. (24) shows that Voice[+D] also introduces and agrees in D-feature with its DP specifier, resulting in two sets of nominal features on the head, the hierarchy of which is determined by order of Merge; for clarity, this hierarchy is notated using numerical subscripts, where the larger number indicates a higher position in the tree.

(24) Feature sharing between *v* and Voice[+D]



Through feature sharing with *v*, Voice[+D] bears the φ -features of the Theme. In this way, φ -features originating within the (lower) *v*P become visible to Voice; feature sharing in fact permits direct argument features to be derived on Voice[+D] itself. I assume valued φ -features may be shared between any functional heads within the extended *v*P projection on which these features are lexically unvalued.

3.2 Analysis of ergative case

Equipped with the above assumptions, in this section I present my analysis of ergative case assignment in detail, using Niuean as a case study. The core proposal is that only Voice[+D] with a valued φ -feature is able to assign ergative case to its specifier. Neither Voice[+D] whose φ -feature remains unvalued nor any other flavour of Voice can assign ergative case. Deal (2010) offers a similar proposal for Nez Perce, in which ergative case may only be spelled out on the subject if *v* phi-agrees with a direct argument.¹⁶ I assume that in Niuean, exactly one nominal undergoes φ -agreement.

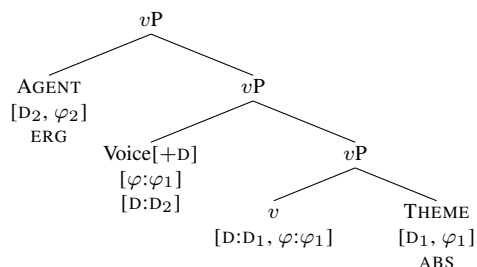
An example of a simple transitive construction with an ergative subject is repeated in (25) from Niuean. As shown in the corresponding tree in (26), the absolutive Theme agrees with *v* in both D- and φ -features, thereby valuing the previously unvalued D and φ on *v*. The *v* then values the lexically unvalued φ -feature of Voice[+D] through feature sharing via Merge; this φ -feature is that of the Theme. Voice[+D] introduces an external argument that agrees with it in D only and will be interpreted as a thematic Agent. Crucially, since Voice[+D] has a valued φ -feature, that of the absolutive object, it assigns ergative case to its specifier.

- (25) Ne inu e Sione e kofe.
 PAST drink ERG.P Sione ABS.C coffee
 ‘Sione drank the coffee.’

(Massam 2000: 98)

- (26) Ergative transitive construction

¹⁶ Deal’s (2010) *v* head “bundles”, in Harley’s (2017) terms, the functions of Voice and *v* as defined in my system; I return to this point in §3.4.

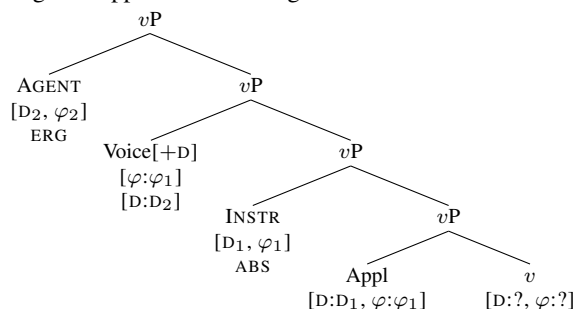


Applicatives can satisfy the transitivity requirement on ergative case assignment, as shown in (27). Objects and applicatives therefore behave alike for the purposes of transitivity. This parallel is captured if feature sharing between Appl and Voice[+D] is assumed to occur in the same way as it does between *v* and Voice[+D]. In the tree in (28), *v* does not merge with a DP and so remains unvalued for D and φ , notated with ?. Without valued features, *v* cannot share their values with a higher head. Appl then introduces and undergoes agreement with the Instrument in both D and φ , which values the features on Appl. Appl shares its Instrument φ -feature with Voice[+D], which can therefore assign ergative case to its specifier, with which it D-agrees.

- (27) Ne tohitohi aki e Sione e pene.
 PAST writing INSTR ERG.P Sione ABS.C pen
 ‘Sione is writing with the pen.’

(Massam 1998: 5)

- (28) Ergative applicative of unergative construction

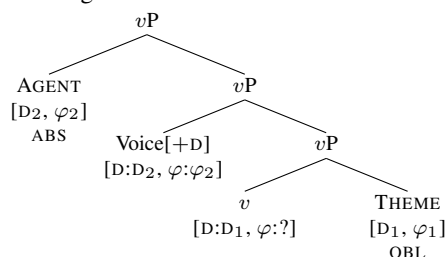


Like most ergative languages, Niuean has a non-ergative transitive construction, as in (29). In the corresponding tree in (30), the Theme only agrees with *v* in its D-feature and receives oblique case (unmarked); thus *v* remains unvalued for φ and cannot share its φ -feature with Voice[+D]. Because Voice[+D] has an unvalued φ -feature, it is unable to assign ergative case to its specifier. I assume that there must be exactly one φ -agreed nominal in a clause in order for a derivation to be well-formed in Niuean. The Agent in (30) must therefore agree with Voice[+D] in both D and φ and receive absolutive case in the process.

- (29) Ne inu kofe kono a Mele.
 PAST drink coffee bitter ABS.P Mele
 ‘Mele drank bitter coffee.’

(Massam 2001: 158)

- (30) Non-ergative transitive construction



In unergative clauses, as in non-ergative transitive constructions, Voice[+D] does not have a valued φ -feature from a lower argument and therefore cannot assign ergative case to its specifier (31a). Unaccusatives involve Voice[−D], which

Table 5 Typology of Voice in ergative languages

Construction	Ergative subject	Lexical Voice feature	Valued φ -feature
Ergative transitive	Yes	[+D]	Yes
Non-ergative transitive	No	[+D]	No
Unergative	No	[+D]	No
Unaccusative	No	[-D]	Yes
Anticausative	No	Unspecified	Yes

bears the valued φ -feature of the theme via feature sharing with *v* but does not license a specifier and therefore never assigns ergative case (31b).¹⁷ Anticausatives involve unspecified Voice, which is also not an ergative case assigner (31c).¹⁸

- (31) a. Kua koli a ia.
 PERF dance ABS.P 3.SG
 ‘She danced.’
- b. Kua mokulu e tau fua mago.
 PERF fall ABS.C PL fruit mango
 ‘The mangoes fell.’ (Massam 2016: 3)
- c. Kua ma-lipi e lupo.
 PERF ANTICAUS-break ABS.C bottle
 ‘The bottle is broken. / The bottle broke.’ (Sperlich 1997: 184)

The proposed analysis of the interaction between Voice and *v*P therefore straightforwardly captures ergative–non-ergative alternations in ergative languages. Only Voice[+D] with a valued φ -feature can assign ergative case to its specifier (Table 5); this φ -feature can come from any direct argument, positioned on Voice via feature sharing with a lower verbal functional head.

3.3 Analysis of Austronesian voice and case

In this section, I show that the interaction between Voice and the nominal features shared by its sister *v*P has consequences for the spell-out of the Voice head itself as well as for the realisation of the subject and the object. Austronesian-type voice systems exhibit overt voice alternations based on the grammatical function of the pivot, the most prominent argument in the clause. I propose that the pivot agrees with and values the φ -feature on the functional head it merges with; this feature value is shared with Voice and can affect its overt realisation. The bipartite nominal feature system assumed in this paper captures the *ang–ng* case dichotomy found in many Austronesian languages but shown most clearly in Tagalog. Examples from Tagalog will therefore be used throughout this section; other Austronesian-type voice languages nonetheless display the same general pattern.

In Tagalog, the pivot is always marked *ang*, which is frequently glossed as nominative or absolutive case in the literature. *Ang*, which conveys definiteness/specificity, appears on the subject in Agent Voice constructions (32a) but on the object in Patient Voice (32b). The non-pivot argument receives *ng*-marking.

- (32) a. B<um>ili ang babae ng isda.
 <AV.PERF>buy ANG woman NG fish
 ‘The woman bought a/*the fish.’ Agent Voice
- b. B<in>ili ng babae ang isda.
 <(PV.)PERF>buy NG woman ANG fish
 ‘The woman bought the/*a fish.’ Patient Voice
 (Aldridge 2012: 194)

Ng (pronounced /nɔŋ/) is often referred to as genitive or ergative if on a subject and oblique if on an object; however, such a view obscures the fact that, just like pivots, non-pivot arguments receive the same case marking regardless of their

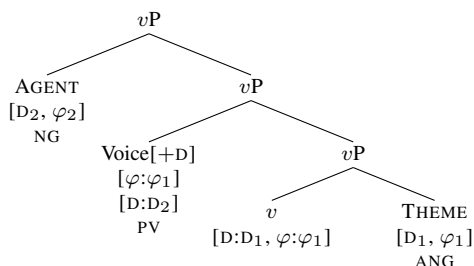
¹⁷ Since Voice[-D] does not assign ergative case, I suggest that the applicatives of unaccusatives discussed in §2.2 actually have Voice[+D], which bears the valued φ -feature of the applicative and can therefore assign ergative case to the raised theme.

¹⁸ Some lexical causatives in Niuean have ergative subjects (Sperlich 1997), which can be analysed as Voice[+D] (Alexiadou et al. 2006, 2015; Schäfer 2008).

grammatical function.¹⁹ My nominal feature system provides a natural account of the *ang-ng* case dichotomy. I propose that only the pivot may agree in φ -feature with a functional head along the extended *vP* projection; φ -agreed nominals are marked with *ang*. Arguments that only agree with a functional head in D-feature are marked *ng*.

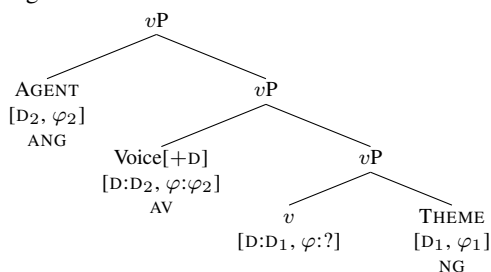
Case marking alternates concurrently with the realisation of Voice. In the Patient Voice construction in (33), the Theme agrees with and values the D- and φ -features of *v* and thus receives *ang* marking. The *v* head then shares its φ -feature with Voice[+D]. I propose that Voice[+D] with a valued φ -feature is spelled out as the Patient Voice marker. I assume that in Tagalog, Voice can only bear one valued φ -feature; thus the argument introduced by Voice[+D], interpreted as the Agent, only agrees with Voice[+D] in its D-feature and is marked *ng*.

(33) Patient Voice construction



In the Agent Voice construction (34), by contrast, the Theme only D-agrees with *v* and is marked *ng*. Voice[+D] cannot have its φ -feature valued via feature sharing with *v* and is therefore realised as Agent Voice. The Agent then agrees with Voice[+D] in both D and φ , resulting in *ang* marking.

(34) Agent Voice construction



Patient Voice is therefore the spell-out of Voice[+D] with a valued φ -feature, while Agent Voice spells out Voice[+D] with an unvalued φ -feature. A welcome consequence of this analysis is that the Patient Voice–Agent Voice alternation in Austronesian-type voice languages is derivationally identical to the ergative–non-ergative alternation in ergative languages (§3.2).

Most Austronesian-type voice systems have one or two additional overt voice distinctions beyond Agent and Patient Voice. Tagalog, for example, also exhibits Locative and Circumstantial Voice, which have a location pivot (35c) and benefactive or instrumental pivot (35d), respectively.

- (35) a. B<um>ili ang bata ng tela.
 <AV.PERF>buy ANG child NG cloth
 ‘The child bought cloth.’ Agent Voice
- b. B<in>ili ng bata ang tela.
 <(PV.)PERF>buy NG child ANG cloth
 ‘The child bought the cloth.’ Patient Voice
- c. B<in>ilh-an ng bata ng tela ang palengke.
 <(PV.)PERF>buy-LV NG child NG cloth ANG market
 ‘The child bought the/some cloth at the market.’ Locative Voice

¹⁹ I assume that *sa*-marked nominals in Tagalog, often considered to be datives, are introduced by prepositions and are therefore not core arguments of the verb (Ramos 1974; Rackowski 2002).

- d. **I-b<in>**ili ng bata ng tela ang nanay.
 CV-<(PV.)PERF>buy NG child NG cloth ANG Mother
 ‘The child bought the/some cloth for Mother.’
 (adapted from Maclachlan 1992) Circumstantial Voice

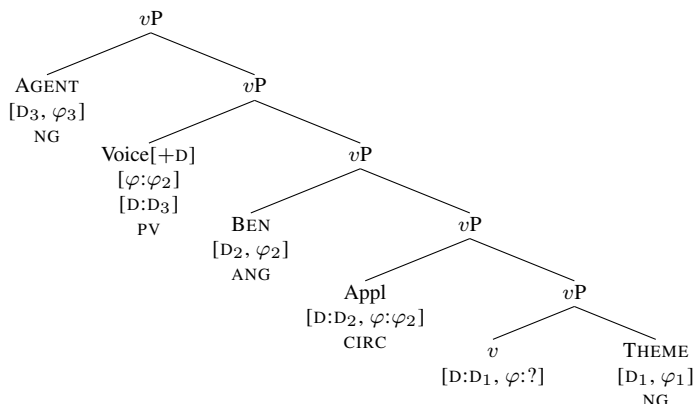
Rackowski (2002) argues that the Locative and Circumstantial Voice constructions combine Patient Voice with a high applicative head (see also Aldridge 2004, 2012; Rackowski and Richards 2005); this is shown by the presence of both the Patient Voice infix <in> and a Locative suffix *-an* (35c) or Circumstantial prefix *i-* (35d).

I adopt a version of Rackowski’s approach and assume that the Locative and Circumstantial Appl heads introduce the pivot and that Patient Voice spells out Voice[+D] with valued φ in the usual way. More specifically, Appl obligatorily φ -agrees with the argument it introduces in Tagalog. Appl then shares its valued φ -feature with Voice[+D], triggering the spell-out of Patient Voice. Notice also that in Locative and Circumstantial Voice, both the subject and the object are *ng*-marked, supporting a bipartite nominal feature system that operates independently of the grammatical function of these nominals.

To illustrate, (37) gives the derivation for the Circumstantial Voice construction in (36). The Theme merges and undergoes only D-agreement with *v* and is therefore marked *ng*; *v* has no valued φ -feature to share with Appl, which is spelled out by the Circumstantial applicative prefix, notated CIRC. The Beneficiary argument then merges as the specifier of Appl and agrees in both D and φ , thereby receiving *ang*-marking and valuing both features on Appl. Appl then shares its valued φ -feature with Voice[+D], which triggers the spell-out of Patient Voice. Finally, the Agent argument merges and agrees with Voice[+D] in D-feature only and is marked *ng*.

- (36) **I-b<in>**ili ng bata ng tela ang nanay.
 CV-<PV.PERF>buy NG child NG cloth ANG Mother
 ‘The child bought the/some cloth for Mother.’ (Maclachlan 1992)

- (37) Circumstantial Voice construction



Like direct object pivots, then, applicatives can also trigger the spell-out of Patient Voice. Again, this is a neat parallel to the conditions for ergative case assignment in ergative languages. In both cases, Voice[+D] with a valued φ -feature is overtly distinguished from Voice[+D] with an unvalued φ -feature. The interaction between the lexical and derived features of Voice in languages with Austronesian-type voice systems is given in Table 6. These languages vary in the spell-out of Voice[-D]; Tagalog, for instance, uses Agent Voice marking on unaccusative predicates (Aldridge 2004), while Puyuma leaves the verb unmarked (Teng 2007).

The proposed typology of the interaction between the lexical features of Voice and valued φ -features shared by its sister *vP* is summarised in Table 7. My approach unifies the conditions on ergative case assignment and the spell-out of Austronesian-type voice and case distinctions. Both ergative transitive constructions and Patient Voice constructions involve Voice[+D] with a valued φ -feature of a direct argument (Type 1), while non-ergative unergative and transitive constructions and Agent Voice constructions involve Voice[+D] with unvalued φ (Type 2). Voice[-D] (Type 3) appears in unaccusatives, and unspecified Voice (Type 4) appears in anticausatives; both types bear a valued φ -feature of a direct argument. I assume that clauses must contain at least one nominal that has undergone φ -agreement; it may be that only φ -agreed nominals are visible to Tense and can therefore serve as subjects/pivots. Featural combinations that do not derive clauses with at least one φ -agreed nominal, such as Voice[-D] with unvalued φ , are therefore ruled out, indicated by *. Unspecified Voice with unvalued φ is marked (*) as it is possible in the presence of higher φ -agreeing head, such as T or a higher Voice, as will be discussed in the analysis of causatives of transitives given in §4.2 and Japanese in §5.

Table 6 Typology of Voice in Austronesian-type voice systems

Voice marking	Lexical Voice feature	Valued φ -feature	Other heads
Patient Voice	[+D]	Yes	–
Agent Voice	[+D]	No	–
Locative Voice	[+D]	Yes	Appl
Circumstantial Voice	[+D]	Yes	Appl
Agent Voice/Unmarked	[–D]	Yes	–
Non-active	Unspecified	Yes	–

Table 7 Typology of lexical and derived Voice feature interaction

		Derived	
		Valued φ	Unvalued φ
Lexical	[+D]	1	2
	[–D]	3	*
	Unspecified	4	(*)

3.4 Discussion and alternatives

My proposal assumes that all nominals must be abstractly licensed in the syntax, via D-agreement with a licensing head. Case assignment is at least in part also determined in the syntax, as a reflex of D- and φ -agreement between a nominal and a licenser. Locating case assignment in the syntax explains why case marking alternates concurrently with other effects observed at PF and LF. In Tagalog, *ang*-marked nominals are interpreted as definite/specific and trigger voice morphology alternations on the verb, while *ng*-marked nominals are indefinite and invisible to voice alternations. This view therefore differs from, for example, a dependent case approach (Marantz 1991/2000), in which case calculation relies on c-command relations between nominals after Spell-Out (Baker and Vinokurova 2010; Baker 2014; Baker and Bobaljik 2017). By locating case assignment in the post-syntactic component, a dependent case view account of Tagalog would require positing an independent mechanism to capture the effects of *ang-ng* marking on voice morphology and interpretation.

The current proposal also assumes, as argued for by much recent work (Alexiadou et al. 2006, 2015; Pylkkänen 2008; Schäfer 2008; Harley 2009, 2013, 2017; Legate 2014; Wood 2015), that Voice and *v* are distinct projections which function independently in nominal licensing: *v* can license an internal argument and Voice can license an external argument. Thus Voice does not merely introduce a specifier according to its lexical feature specification but also participates in D-licensing and φ -agreement with a nominal in its specifier, which produces different syntactic and interpretive effects. My analysis accounts for case and voice morphology patterns without invoking lexical flavours of *v* that distinguish the kind of eventuality denoted by the predicate, e.g. stative v_{BE} , eventive v_{DO} (Hale and Keyser 1993; Harley 1995; Cuervo 2003; Folli and Harley 2005), and is therefore consistent with a more minimal theory of argument structure in which there are no such flavours, as was suggested in Pylkkänen (2008).

Harley (2017) has suggested that in some languages, the functions of Voice and *v* may be “bundled” into a single head. While the bundling approach is frequently assumed in analyses of ergativity (e.g. Aldridge 2004, 2012; Deal 2010; Coon 2017), it does not make the correct predictions for the overt morphological distinctions observed across languages. To illustrate, consider non-ergative transitive constructions (30) and transitive Agent Voice constructions (repeated in (38)), in which the *v* head licenses the direct object via D-agreement but does not share its valued D-feature with Voice[+D]. Since Voice[+D] does not receive a valued nominal feature from below, it behaves as though the construction is unergative. In other words, *v*’s licensing of the direct object does not directly contribute to overt voice morphology alternations.

(38) Agent Voice construction

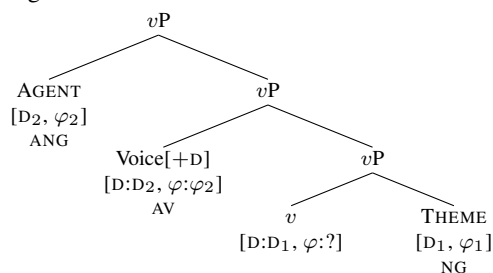
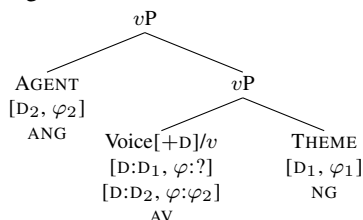


Table 8 Typology of bundled Voice/*v* features

		Derived		
		[D, φ]	[D]	\emptyset
Lexical	[+D]	1	2	2
	[-D]	3	*	*
	Unspecified	4	(*)	(*)

However, the inertness of *v* to voice alternations is exactly what is expected given the data. Recall that in Puyuma, Voice[+D] with an unvalued φ -feature is spelled out with Agent Voice morphology, whether or not there is an internal argument (§1.1, §3.2). Thus Voice is sensitive not to the licensing of direct arguments (via D-agreement) but their φ -features (acquired via feature sharing with *v*). This generalisation is not explained in a bundling analysis in which Voice/*v* licenses and thus bears the features of both the internal and external arguments. Crucially, unergative and transitive Voice/*v* in such an approach would be featurally different; the former would bear valued features of only the agent while the latter would additionally bear features of the theme, sketched in (39). One might expect this featural difference to be reflected in the spell-out of Voice/*v*. However, no overt contrast between unergatives and Agent Voice transitives is attested in Austronesian-type voice languages.

(39) Agent Voice construction with bundled Voice/*v*

In fact, voice systems never seem to distinguish between a D-licensed (but not φ -agreed) direct argument and no direct argument at all; this result is mysterious in a bundled Voice/*v* approach, which would predict unattested differences between the rightmost two columns of Table 8.

There also exist several alternative analyses of Austronesian-type voice marking as agreement with an A'-extracted, topic-like pivot (Chung 1994; Richards 2000; Rackowski 2002; Pearson 2005; Chen and Fukuda 2017; Erlewine et al. 2017). While I do not see my approach as being incompatible with the general view that voice morphology correlates with information structural effects, my analysis locates the calculation of case and voice morphology in the Voice domain, which allows for the unification of ergative and Austronesian-type voice patterns. My proposal also provides a fine-grained enough typology of Voice to capture voice distinctions among intransitive constructions, which A'-agreement approaches have generally ignored. Importantly, A'-agreement approaches predict a one-to-one mapping between voice morphology and the grammatical function of the pivot and thus have difficulty accounting for languages that permit voice stacking, such as in Tsou (Formosan) (Chang 2011). Voice morphology in Tsou can furthermore have idiosyncratic effects on the semantic interpretation of the verb. The verb stem *phi(n)-* in (40a) is directly affixed with Circumstantial Voice morphology and is interpreted as 'sell'. However, when the Locative Voice morpheme intervenes between the stem and Circumstantial Voice, the verb is interpreted as 'buy' (40b). This difference in meaning must be derived in the syntax rather than in the lexicon, as the voice affixes also differentially affect the case assignment and interpretation of nominals.

(40) Tsou

- a. i-ta phi-**eni** to Pasuya 'o simeo.
 ERG-3SG buy-CV OBL Pasuya ABS pork
 'He sold the pork to Pasuya.' (Chang 2011: 809)
- b. i-ta phin-**i-eni** to simeo 'o Pasuya.
 ERG-3SG buy-LV-CV OBL pork ABS Pasuya
 'He bought pork for Pasuya.' (Chang 2011: 812)

It is unclear how A'-extraction can affect the lexical meaning of the verb. Voice and Appl, on the other hand, are part of the extended projection of the verb and contribute thematic information, and thus more plausibly have an effect on verb interpretation.

Finally, I should briefly address languages with multiple overt phi-agreement. While Austronesian languages permit a single pivot/absolutive argument per clause, suggesting a maximum of one valued φ -feature on Voice, languages like Inuktitut and Nez Perce display subject and object agreement on the verb, indicating the presence of two φ -agreed nominals in the clause. At least two analyses of multiple agreement are consistent with my proposal: (i) the φ -features of both the object and the subject are valued on Voice, via feature sharing with *v* and Agreement between head and specifier, respectively; or (ii) only the object φ -feature is valued on Voice, and T later φ -probes for the subject. The fact that the subject and object agreement morphemes are frequently portmanteau in these languages (e.g. Inuktitut (10)) suggests that the valued φ -features of both arguments may accumulate on the same Voice head; this is also argued for by Deal (2010). Person hierarchy effects in Mayan Agent Focus constructions, in which agreement cross-references the more prominent argument whether it is the internal or external argument, point to the same conclusion (Aissen 1999). I thus tentatively posit that languages can differ in the number of valued φ -features permitted on Voice.

In sum, ergative languages and Austronesian-type voice systems demonstrate the interaction between the lexical features of Voice and valued φ -features derived from its sister *v*P. My proposal provides a principled account of this interaction.

4 Austronesian causatives

In this section, I show that the typology of Voice developed in §3 for ergative case assignment and Austronesian-type voice systems provides a natural approach to productive causatives in Austronesian. In §4.1, I propose that causatives involve Voice[+D] over another Voice head; the lower Voice is spelled out by the causative morpheme and may introduce a causee, while the higher Voice[+D] introduces the agent of the entire causative. In §4.2, I show that Austronesian-type languages have both the *faire-infinitif* and *faire-par* causative of transitive types identified in Romance languages and argue that former embeds Voice[+D] and the latter embeds either unspecified Voice or Voice[−D] with an Appl head. Finally, I discuss and reject two alternative analyses of Austronesian causatives in §4.3. The data given in this section focus on Ulivlivek (Formosan), an understudied language of southwestern Taiwan closely related to Puyuma, and, except where noted, are the result of original fieldwork.

4.1 Causatives of intransitives

It has been a long-standing puzzle as to why causatives of unergatives and causatives of unaccusatives appear to behave syntactically identically (Kayne 1975; Postal 1977; Alsina 1992; Guasti 1996; Folli and Harley 2007; Pykkänen 2008; Legate 2014). In Tagalog, for instance, productive causatives of intransitives are identical in the case marking of their arguments and in their voice marking, whether the embedded predicate is unergative (41a) or unaccusative (41b).

(41) Tagalog

- a. P<in>a-kanta ko ang bata.
 <(PV.)PERF>CAUS-sing 1SG.NG ANG child
 ‘I made the child sing.’
- b. P<in>a-gising ko ang bata.
 <(PV.)PERF>CAUS-wake.up 1SG.NG ANG child
 ‘I made the child wake up.’

In both examples, the causee is the *ang*-marked pivot and behaves like a direct argument, triggering the spell-out of Patient Voice. Notice that the Patient Voice infix <in> attaches to the causative prefix *pa-* rather than the verb root, suggesting that the causative morpheme is spelled out closer to the verb than the voice marker.

Like simple transitives, causatives of intransitives can undergo voice alternations in languages with Austronesian-type voice systems. As shown in (42) and (43), respectively, both simple transitives and causatives of unergatives in Ulivlivek exhibit the Patient Voice–Agent Voice alternation. While the Agent Voice morpheme is not overtly spelled out in (43b), the clause exhibits case marking typical of an Agent Voice construction, in which the subject is the pivot.

(42) Ulivlivek

- a. tu=ekan-aw kana vavuy ni Asing.
 3SG.ERG-eat-PV ABS.DEF pork ERG.P Asing
 ‘Asing ate the pork.’

Patient Voice

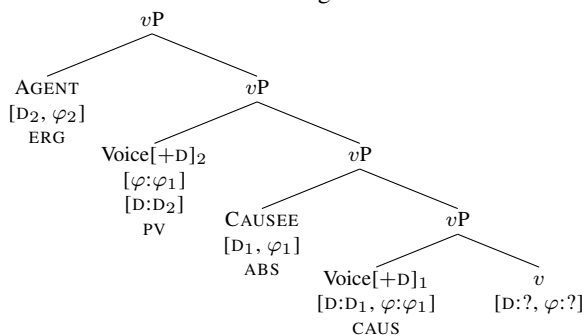
- b. **m-ekan** (na vavuy) i Asing.
 AV-eat OBL.DEF pork ABS.P Asing
 ‘Asing ate the pork/something.’ Agent Voice
 (Lin 2016: 4)
- (43) a. **ku=pa-senay-aw** i Asing.
 1S.ERG=CAUS-sing-PV ABS.P Asing
 ‘I made Asing sing.’ Patient Voice
- b. **pa-senay=ku** *(kani Asing).
 (AV.)CAUS-sing=1SG.ABS OBL.P Asing
 ‘I made Asing/*someone sing.’ Agent Voice

As Ulivelivek is an ergative language (Lin 2016), transitives and causatives exhibit both the Patient Voice–Agent Voice alternation and the ergative–non-ergative alternation.²⁰ Thus the causees in (43) behave as direct arguments for the purposes of ergative case assignment and voice morphology.

Unlike objects of simple transitives, however, the causee in causatives of intransitives is always obligatory in Ulivelivek. In Agent Voice transitives, the object is marked oblique and can be freely dropped, giving rise to an indefinite reading (42b). An unergative Agent Voice causee such as in (43b), on the other hand, cannot be omitted despite being oblique. This suggests that while the causee behaves like a direct argument, it is not introduced in the same way as a transitive theme. This conclusion recalls the applicative constructions discussed in §2.2 and §3.2–3.3, in which applied arguments are indeed direct arguments but merge as the specifier of Appl rather than as sister to *v*. The proposed analysis of ergative case assignment and Austronesian-type voice morphology accounts for the ability of arguments that are not direct objects to nonetheless satisfy the transitivity requirements on ergative case and Patient Voice marking, including unergative causees.

Specifically, I propose that, like simple unergative subjects, the unergative causee in (43a) is introduced by Voice[+D], which obligatorily takes and licenses a DP specifier. The agent of the entire causative is introduced by a higher Voice[+D]. In the derivation of Patient Voice causatives of unergatives in (44), Voice[+D]₁ introduces the unergative Causee, which agrees with and values both D and φ on Voice[+D]₁. Voice[+D]₁ then shares its valued φ -feature with Voice[+D]₂; this triggers the spell-out of Patient Voice on Voice[+D]₂ and ergative case on the Agent specifier.

(44) Patient Voice causative of unergative



In Ulivelivek, the causative morpheme is a prefix to the verb root and Patient Voice is a suffix. In Tagalog, however, both morphemes can be preverbal, as shown previously in (41), and the causative morpheme is spelled out closer to the verb than the voice marker. This morpheme order suggests that in (44), it is the lower Voice[+D]₁ that is spelled out as the causative marker *pa-*.

My broader proposal for Austronesian productive causatives, then, is that they involve Voice[+D] over another Voice head, which can be of any featural specification. Thus causatives simply add a causer argument rather than an additional causing event (Alexiadou et al. 2006, 2015; Schäfer 2008; Kim 2011; Nash 2017); in (44) the lower Voice[+D] head introduces the unergative Causee, while the higher Voice[+D] introduces the Agent of the entire causative. In Austronesian, the causative marker *pa-* spells out the lower Voice, while the causer is introduced by the higher Voice[+D]; the Vocabulary Item for the causative marker is given in (45).²¹

²⁰ Clitics and case markers are frequently syncretic in Austronesian, e.g. Ulivelivek *ku* for the ergative and absolutive first singular clitics (43), and Niuean *e* on both ergative proper nouns and absolutive common nouns (Massam 1998). Ulivelivek ergative clitics are preverbal and absolutive clitics are postverbal.

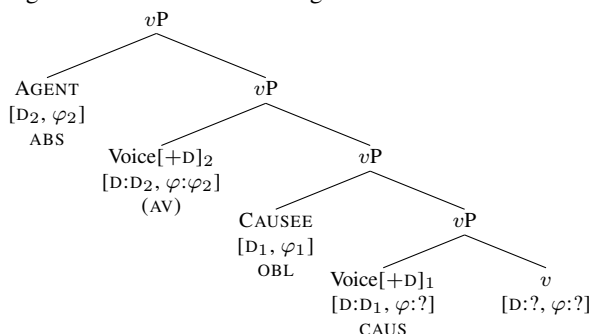
²¹ Unlike the higher Voice head, the lower Voice head does not display overt alternations but is always realised as *pa-* in the context of a c-commanding verbal functional head. This proposal requires adopting two assumptions. The spell-out of a functional head must be able to be

(45) Voice \leftrightarrow *pa-* / Voice[+D] ___

The higher Voice[+D]₂ is then spelled out with regular voice morphology. Causatives in Austronesian-type languages thus overtly spell out both Voice heads.²²

Since causatives involve the interaction of Voice heads, it comes as no surprise that causatives of intransitives exhibit the same voice alternations as simple transitive constructions. The Agent Voice causative in (43b) is a non-ergative transitive construction and therefore classified as being Agent Voice despite the lack of overt voice marking on the verb. As shown in (46), deriving the Agent Voice causative simply involves the Causee agreeing with Voice[+D]₁ in only the D-feature. Voice[+D]₁ thus has no valued φ -feature to share with Voice[+D]₂. As Voice[+D]₂ is unvalued for φ , it cannot assign ergative case to its specifier. Voice[+D]₁ is realised at PF as causative *pa-*, according to (45).

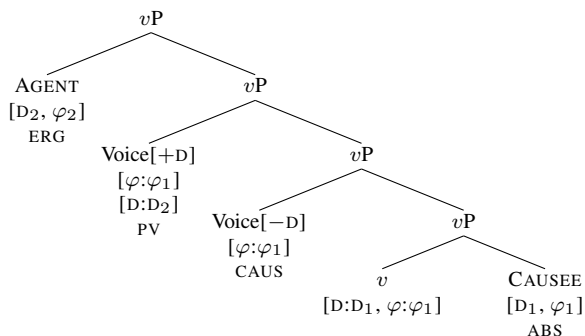
(46) Agent Voice causative of unergative



Causatives of unaccusatives such as (47) are also given a straightforward analysis in my approach. Unaccusative predicates involve Voice[−D], which does not license a DP specifier. As shown in (48), the unaccusative Causee merges as sister to *v*, agreeing with and valuing the D- and φ -features of *v*. The φ -feature of the Causee is then shared with Voice[−D], which in turn shares it with Voice[+D]. Since Voice[+D] bears a valued φ after feature sharing, it is spelled out as Patient Voice and assigns ergative case to its specifier. Voice[−D] is spelled out by the causative marker.

(47) ku=pa-zuwa-yay i Asing.
 1S.ERG=CAUS-come-PV ABS.P Asing
 ‘I made Asing come.’

(48) Patient Voice causative of unaccusative



A comparison of (48) and the Patient Voice causative of unergative tree in (44) demonstrates two things. Firstly, it shows that the lower Voice head in productive causatives may be specified as [+D] or [−D]; I argue in the next section that unspecified Voice is also found in some causatives of transitives in Austronesian. Secondly, it demonstrates that the mechanism of nominal feature sharing adopted in this paper captures the identical behaviour of causatives of unergatives, causatives of unaccusatives and simple transitives in case assignment and voice marking.

contextually conditioned by the immediately c-commanding head. Secondly, the structural context for Vocabulary Item insertion must be assumed to take precedence over featural context, such that insertion of *pa-* wins out over that of the voice affixes that alternate based on the features of Voice.

²² Causative constructions with two overt morphological markers are not unusual; other examples include Georgian causatives with *a-* and *-in-* (Nash 1994; 2017), Japanese *-sa-se-* causatives (Shibatani 1976; Miyagawa 1998; Harley 2008), and the high and low causative morphemes in Bantu (Hyman 2003).

4.2 Causatives of transitives

This section turns to Austronesian-type causatives of transitives. First observed by Kayne (1975) for French, many languages exhibit two types of causatives of transitives, called the *faire-infinitif* (FI) (49a) and *faire-par* (FP) constructions (49b).

(49) French

- a. J'ai fait manger le repas *(à Jean).
I-have.1SG made eat the meal to Jean
'I made Jean/*someone eat the meal.' FI
- b. J'ai fait manger le repas (par Jean).
I-have.1SG made eat the meal by Jean
'I had the meal eaten by Jean/someone.' FP

Previous work has described in detail the syntactic and semantic differences between the FI and FP in e.g. French (Kayne 1975; Postal 1979), Italian (Guasti 1996; Folli and Harley 2007), Chichewa (Alsina 1992) and Georgian (Nash 2017). One characteristic difference between the two constructions is the level of affectedness of the causee, which can be diagnosed by whether the causee may be omitted. While the causee is considered the affected argument in the FI and is obligatorily present in the clause (49a), an FP causee remains unaffected and may thus be omitted, giving rise to an indefinite reading (49b).

Causatives of transitives in Austronesian-type voice languages display a similar contrast, reflected in case and voice marking. In Ulivivek Patient Voice causatives of transitives, for example, the causee is the pivot and thus discourse-specific; if omitted, it is interpreted pronominally (50a). In the Agent Voice and Circumstantial Voice causatives of transitives, by contrast, the causee is marked oblique if overt and interpreted as indefinite if omitted (50b, c); the Agent Voice and Circumstantial Voice causatives differ in the definiteness of the embedded theme, which conditions the voice alternation, but pattern alike in the interpretation of the causee.

(50) Ulivivek

- a. ku=pa-na'u-aw za valray #(i Asing).
1S.ERG=CAUS-read-PV OBL.IND book ABS.P Asing
'I made Asing/him/*someone read a book.' Patient Voice ≈ FI
- b. pa-na'u=ku za valray (kani Asing).
(AV.)CAUS-read=1SG.ABS OBL.IND book OBL.P Asing
'I had Asing/someone/*him read a book.' Agent Voice ≈ FP
- c. ku=pa-na'u-wanay na valray (kani Asing).
1S.ERG=CAUS-read-CV ABS.DEF book OBL.P Asing
'I had Asing/someone/*him read the book.' Circumstantial Voice ≈ FP

Thus the contrast between the Patient Voice causatives of transitives and the Agent Voice and Circumstantial Voice causatives of transitives is analogous to that between the FI and FP found in other languages.²³

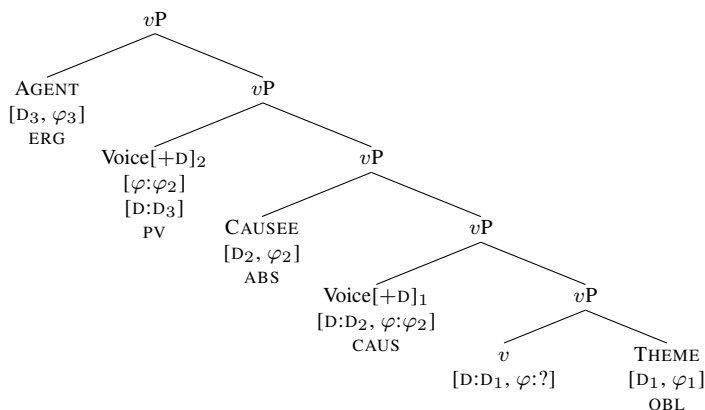
I propose that Patient Voice causatives of transitives embed a simple transitive, with the lower Voice head specified as [+D], while Agent Voice causatives of transitives embed unspecified Voice. When an argument merges as the specifier of Voice c-commanded by another Voice, the argument is interpreted as a causee. Unspecified Voice is compatible with the presence or the absence of a DP specifier but cannot syntactically license an argument. A DP merged in the specifier of unspecified Voice is therefore marked oblique and is assumed to be licensed by some other means, such as by a silent preposition. When unspecified Voice has no specifier, the Causee role is existentially closed (see Legate 2014 for a similar approach). I suggest that Circumstantial Voice causatives embed Voice[-D] and a Circumstantial applicative head; I will return to this later in the section.

The derivation for the Patient Voice causative in (51) is given in (52). *v* agrees only in D-feature with the Theme and thus has no valued φ -feature to share with Voice[+D]₁. Voice[+D]₁ introduces a DP in its specifier and agrees with it in both D and φ ; this DP is interpreted as the Causee at LF. Voice[+D]₁ then shares its valued φ -feature with Voice[+D]₂, which is spelled out with Patient Voice and assigns ergative case to its specifier. Because Voice[+D]₁ is c-commanded by another Voice head, it is spelled out as *pa-*, according to (45).

²³ Ulivivek, being a language whose voice morphology is sensitive to definiteness/specificity, therefore has two versions of the FP construction identified for e.g. French, a language which does not display morphological distinctions based on definiteness. As far as I am aware, there is no productive Locative Voice form of the causative in Austronesian-type voice languages.

- (51) ku=pa-na'u-aw za valray i Asing.
 1S.ERG=CAUS-read-PV OBL.IND book ABS.P Asing
 'I made Asing read a book.'

- (52) Patient Voice causative of transitive

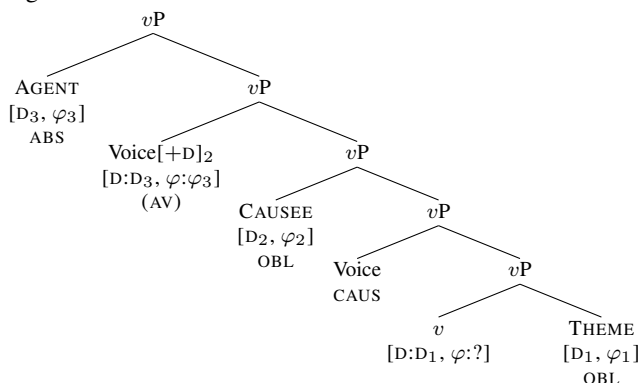


This derivation proceeds in a very similar way to the Circumstantial Voice construction given in (37) in §3.3; instead of a Circumstantial applicative that introduces the Benefactive pivot, (52) has an embedded Voice[+D] that introduces the Causee pivot.

Agent Voice version of causatives of transitives, exemplified in (53), embeds an unspecified Voice rather than Voice[+D]. The Theme agrees D-feature on *v* and receives oblique case. Unspecified Voice may or may not merge a DP specifier but cannot license its specifier if it has one. In (54), an argument merges as the specifier of unspecified Voice but does not agree with it; I assume this argument is licensed in some other way, perhaps via D-agreement with a silent preposition, and is interpreted as the Causee at LF.²⁴ The higher Voice[+D] head does not end up with a valued φ -feature from either of the two lower oblique arguments and therefore cannot assign ergative case to its specifier. The unspecified Voice is spelled out as causative *pa-*.

- (53) pa-na'u=ku za valray kani Asing.
 (AV.)CAUS-read=1SG.ABS OBL.IND book OBL.P Asing
 'I had Asing read a book.'

- (54) Agent Voice causative of transitive



The unspecified Voice in (54) also has an overt specifier, which is interpreted as the Causee. If no argument merges as the specifier of unspecified Voice, existential closure occurs instead at LF, giving rise to an indefinite reading of the Causee; see Legate (2014) for semantically worked-out derivations in a similar approach.

Finally, Austronesian-type voice languages have a third productive form for causatives of transitives: the Circumstantial Voice causative, which is used when the embedded theme is the pivot, as shown in (55) from Ulivelivek. Following the

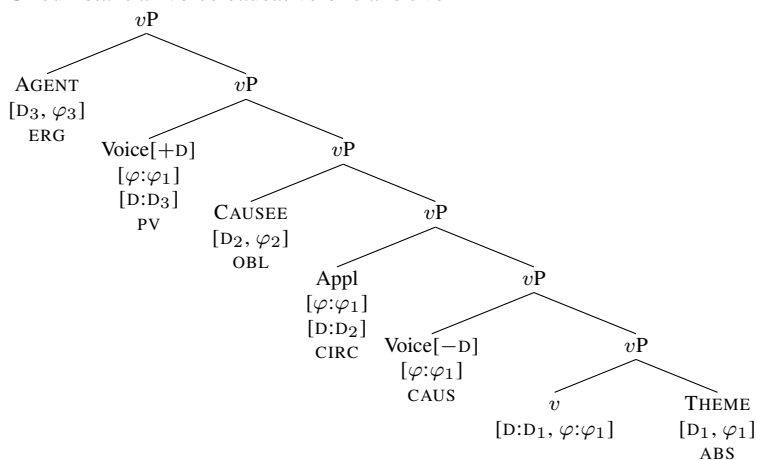
²⁴ In (54), unspecified Voice has an unvalued φ -feature, which is in general not possible in Austronesian-type voice languages as it can derive a construction with no φ -agreed nominal. However, the higher Voice[+D] does agree in φ with its specifier and thus the whole structure is well-formed.

applicative analysis of Tagalog Locative and Circumstantial Voice (§3.3), I decompose the Circumstantial Voice morphology in Ulivelivek into a Circumstantial applicative suffix *-(w)an* inside the Patient Voice suffix *-ay/aw*.²⁵

- (55) *ku=pa-na'u-wanay na valray kani Asing.*
 1S.ERG=CAUS-read-CV ABS.DEF book OBL.P Asing
 'I made Asing read the book.'

As illustrated in (56), I propose that the causee in the Circumstantial Voice causative is introduced by a Circumstantial Appl head merged above Voice[-D]. Nash (2017) provides a similar analysis of the *-in-* causative in Georgian. The Theme in the Circumstantial Voice causative agrees with and valued both D and φ on *v*. I assume that Voice[-D] neither introduces a Causee argument nor provides existential closure of a participant theta-role. Instead, the Causee is introduced by Appl, which bears the valued φ -feature of the Theme via feature sharing.²⁶ This valued φ -feature is then shared with Voice[+D], which is spelled out as Patient Voice.

- (56) Circumstantial Voice causative of transitive



The structures proposed for the three types of causatives of transitives in Ulivelivek are summarised in Table 9, which lists the case marking on each argument and the functional heads involved, where Voice₂ c-commands Voice₁. As Table 9 shows, Voice[+D] in Ulivelivek can embed any of the three lexical Voice heads to create a causative construction. Strikingly, however, Voice[+D]₂ may not embed another Voice[+D]₁ with a valued φ -feature (Type 1 Voice), which would give rise to an ergative/Patient Voice construction.²⁷ Since causatives always involve a higher Voice[+D] that introduces the agent of the causative, this restriction reflects a more general, cross-linguistic prohibition against recursive causative embeddings, as discussed by Svenonius (2005). Key (2013) attempts to account for the lack of causative recursion in Turkish by positing distinct, dedicated heads to introduce the causee (Caus) and agent (Voice) of the causative.²⁸ However, causatives in ergative and Austronesian-type voice languages show that it is Voice[+D] with valued φ that is banned, not Voice[+D] itself. This suggests that what is relevant to the syntax is not just the lexical features of argument-introducing heads but also the distribution of φ -features among the arguments they introduce.

4.3 Alternative analyses

The proposed analysis of productive causatives as Voice over Voice captures the case-marking and voice morphology in causative constructions in Austronesian-type voice languages using the same machinery independently established for

²⁵ It appears to be a cross-linguistic strategy for applicative morphemes, especially instrumental applicatives, to be repurposed in order to introduce (transitive) causees; this occurs in e.g. Georgian (Nash 1994, 2017), Niuean (Massam 1998), Korean (Kim 2011) and Kinyarwanda (Jerro 2016).

²⁶ The Appl head in (56) differs from those discussed previously since, in Austronesian-type languages, Appl normally introduces the pivot in simple non-causative constructions (§3.3), rather than an oblique. In non-causatives, however, Appl does not bear the valued φ -feature of the Theme. I therefore propose that Appl, much like Voice[+D], assigns an oblique (i.e. non-pivot) marking to its specifier if it bears a valued φ -feature but assigns pivot-marking to its specifier if it does not bear valued φ . It can then be supposed that Appl with a valued φ -feature is spelled out by the Circumstantial applicative suffix in Austronesian-type voice systems.

²⁷ Gerdts (1980, 2004) identifies the same restriction in Halkomelem (Salish), an ergative language in which causatives may only embed intransitives or non-ergative transitives; ergative-marked causees appear to be banned in general in ergative languages (Nie 2017).

²⁸ Key (2013) proposes a structure for Turkish causatives in which the dative causee, which is always optional, is introduced as the specifier of a dedicated Caus head. While Key's Caus appears functionally equivalent to unspecified Voice in my system, a finer-grained typology such as that advanced in the current proposal is required to capture the behaviour of causees in other languages.

Table 9 Typology of causatives of transitives in Ulivelivek

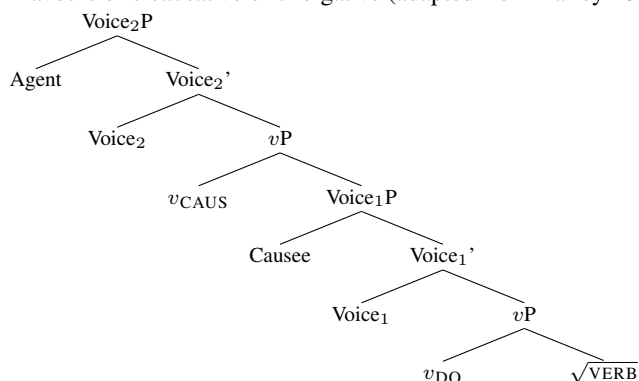
Causative of transitive	Agent	Voice ₂	Causee	Other heads	Voice ₁	Theme
Patient Voice	ERG	[+D]	ABS	–	[+D]	OBL
Agent Voice	ABS	[+D]	OBL	–	Unspecified	OBL
Circumstantial Voice	ERG	[+D]	OBL	Appl	[–D]	ABS

simple transitives. This approach also provides a systematic way of analysing the restrictions found on causatives cross-linguistically. In this section, I briefly discuss and reject two potential alternative analyses of productive causatives in Austronesian.

4.3.1 Flavours of *v*

Hale and Keyser (1993, 2002) proposed that external arguments are introduced by an inventory of little *v* heads which constrain their interpretation; for example, v_{DO} introduces agents, while v_{CAUS} introduces causers. Hale and Keyser's original proposal has since been refined by several authors (Cuervo 2003, 2015; Harley 1995, 2013; Folli and Harley 2005, 2007; Pytkäinen 2008); I take Harley's (2013) recent analysis of Hiaki causatives, illustrated in (57), as representative of the flavours of *v* approach. In her analysis, v_{CAUS} takes a VoiceP as its complement and introduces causative semantics and a higher Voice head introduces the agent of the causing event.

(57) Flavours of *v* causative of unergative (adapted from Harley 2013: 50)



According to this analysis, the Ulivelivek causative marker *pa-* should spell out v_{CAUS} rather than Voice₁, which might be expected to receive an independent realisation.

However, Legate (2014) shows that Acehnese (Malayo-Polynesian) obeys a *Voice- v_{CAUS} -Voice-X constraint, which bans the realisation of two independent voice markers. This constraint is true of Austronesian languages generally. Yet the existence of such a structure is exactly what a flavours of *v* analysis would predict; v_{CAUS} should, in principle, be able to embed another Voice head that is spelled out overtly. This is in fact the analysis that Harley (2013) gives for Hiaki, which does not overtly realise its Voice heads. If adopted for Austronesian-type voice languages, her analysis would predict the spell-out of two voice markers along with the causative morpheme *pa-*; however, this is unattested. Furthermore, as has been previously pointed out (Key 2013; Harley 2017), it is mysterious under a flavours of *v* analysis why multiple causative embeddings would be prohibited (Svenonius 2005).

4.3.2 Legate (2014)

Legate (2014) provides an alternative account of the parallel behaviour of causatives of unergatives and causatives of unaccusatives. She proposes that, in Acehnese, all causatives of intransitives have the same structure and that unergative causees are not voluntary initiators but (involuntary) patients. The sentence in (58), for instance, describes a situation in which Hasan physically moves the baby up and down to simulate jumping. Thus Legate analyses both types of causatives as involving a simple transitive—she uses the term unaccusative—structure, which has both unergative and unaccusative causees merged as direct objects. Her analysis of causatives of intransitives is given in (59); v_{CAUS} is responsible for causative semantics, and a Voice projection introduces the causer and is spelled out by voice morphology.

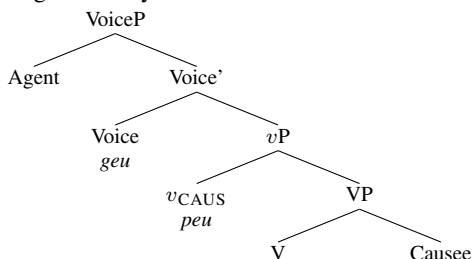
(58) Acehnese

Hasan geu-peu-grôp aneuk nyan.
 Hasan 3.POLITE-CAUS-jump child DEM

‘Hasan caused the child to jump.’

(Legate 2014: 121)

(59) Legate’s analysis of causatives of intransitives (Legate 2014: 121)



Examples such as (58) may equally be analysed as a causative of an accusative in my approach; see (48) in §4.1. However, it is unclear whether such a structure can be stipulated for the causatives of unergatives in all Austronesian languages.

In Ulivelivek, unergative causees do not behave like direct objects under a number of diagnostics. Unergative causees are obligatory even in the Agent Voice, while themes may be dropped (§4.1), and display agentive properties, such as being able to wield instruments, as shown in (60).²⁹ I assume that instruments are introduced by a high Appl head that is crucially c-commanded by the user of the instrument (Rackowski 2002; Pyllkkänen 2008). If the unergative causee can c-command an instrumental applicative, then the structure in (59) does not apply to Ulivelivek.

(60) ku=pa-senay-anay na maiku *(kani Asing).
 1S.ERG=CAUS-sing-CV ABS.DEF microphone OBL.P Asing
 ‘I made Asing sing/*someone with the microphone.’

My proposal does not need to stipulate that causatives of unergatives and causatives of unaccusatives are identical in structure in Ulivelivek. Rather, the embedded Voice head that introduces the unergative causee shares its valued features with the higher Voice[+D] just as Appl does in applicative constructions.

5 Japanese and nominative–accusative languages

This paper has focused on ergative languages and Austronesian-type voice systems, which the lexical and derived features of Voice have effects in the syntax and at spell-out. In this section, I show that the approach developed in this paper can also capture case and voice interactions in a nominative–accusative language such as Japanese.

Like Hebrew and Austronesian-type languages, Japanese exhibits overt argument structure morphology (Jacobsen 1982; Miyagawa 1998; Harley 2008; Oseki 2017). Oseki (2017) shows that the verbal -s- suffix spells out transitive Voice[+D] (61a) and the -R- suffix spells out Voice[-D] (61b). Unspecified Voice, which can occur with or without an external argument, is realised with either zero or -E- marking, depending on the verb; *hirak* ‘open’ in (62) takes the unmarked/zero version.³⁰

- (61) a. John-ga posutaa-o hag-as-ta.
 John-NOM poster-ACC peel-S-PAST
 ‘John took down a poster.’ (Oseki 2017: 7)
- b. Syatsu-ga chijim-ar-ta.
 shirt-NOM shrink-R-PAST
 ‘A shirt shrank.’ (Oseki 2017: 9)
- (62) a. John-ga doa-o hirak-∅-ta.
 John-NOM door-ACC open-∅-PAST
 ‘John opened the door.’

²⁹ The causee in (60) is obligatory, indicating that the construction is indeed the causative of an unergative with an applicative rather than, say, the causative of a transitive.

³⁰ I follow Oseki (2017) in abstracting away from the vowels in the verbal suffixes as they are determined phonologically (Kuroda 1993).

- b. Doa-ga hirak- \emptyset -ta.
 door-NOM open- \emptyset -PAST
 ‘The door opened.’

(Oseki 2017: 15)

It is well-known that the accusative case marker is frequently omitted in colloquial spoken Japanese in a process called *o*-dropping (Kuno 1973; Matsuda 1996; Minashima 2001). What has not been previously noted, as far as I am aware, is the fact that *o*-dropping can give rise to voice morphology alternations. The verb *hag* ‘peel, take down’, for example, has both a marked -s- transitive form, which reflects Voice[+D], and an unmarked transitive form, which reflects unspecified Voice. While accusative objects can trigger -s- or zero morphology on *hag* (63a), unmarked objects cannot trigger -s- and are only compatible with the unmarked transitive form (63b).

- (63) a. John-ga posutaa-o hag- \emptyset /**as**-ta.
 John-NOM poster-ACC peel- \emptyset /**S**-PAST
 ‘John took down a (specific) poster.’
 b. John-ga posutaa hag- \emptyset /***as**-ta.
 John-NOM poster peel- \emptyset /***S**-PAST
 ‘John took down a poster.’

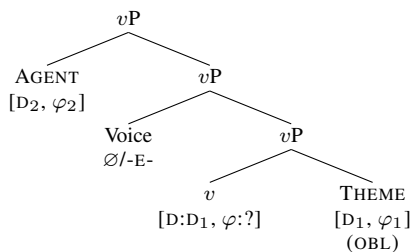
Thus -s- marking requires an accusative-marked object, while zero morphology is compatible with both accusative and unmarked objects. Consider now the verb *kowa* ‘break’, which appears with -s- when transitive and does not have an unmarked transitive form. Only accusative objects are possible with *kowa*; the object cannot remain unmarked (64), confirming that -s- marking only appears with an accusative object.

- (64) John-ga kabin*(-o) kowa-s-ta.
 John-NOM vase-ACC break-S-PAST
 ‘John broke the vase.’

The contrast between accusative and unmarked objects in Japanese can be captured in much the same way as those between absolutive and oblique objects in ergative languages (§3.2) and *ang*- and *ng*-marked arguments in Austronesian-type languages (§3.3). I propose that accusative case is assigned to nominals that agree in both D and φ with a licensing head, while nominals that agree in only D-feature are licensed but remain unmarked for case. Therefore it can be proposed that -s- spells out Voice[+D] with a valued φ -feature acquired via feature sharing with *v*. Notice that this is exactly the same configuration as ergative transitive constructions in ergative languages and Patient Voice constructions in Austronesian-type languages.

Unmarked objects, on the other hand, agree with *v* in only D, leaving *v* unvalued for φ . A tree for the non-accusative transitive construction in (63b) is sketched in (65), where the Theme is an unmarked oblique (OBL). I propose that only unspecified Voice may merge over *v* with unvalued φ in Japanese. Unspecified Voice permits a specifier but does not license it; I therefore assume that in Japanese the Agent can later D- and φ -agree with and be assigned nominative case by T.

- (65) Non-accusative transitive construction



This analysis correctly predicts that verbs which do not have an unspecified Voice form, such as *kowa* in (64), cannot appear in the non-accusative transitive construction. Japanese thus does not have the equivalent of a non-ergative transitive construction (30) or Agent Voice construction (34), both of which involve Voice[+D] with an unvalued φ -feature. Voice in Japanese may only be [+D] if it also bears a valued φ . The pattern in (64) can therefore be understood as a language-specific restriction against Voice[+D] with an unvalued φ -feature, or Type 2 Voice from Table 7. Unspecified Voice with unvalued φ , as in (65), is permitted in Japanese since its specifier can D- and φ -agree with T. The findings in this section are summarised in Table 10.

Table 10 Voice morphology in Japanese

	Derived	
	Valued φ	Unvalued φ
Lexical		
[+D]	-S-	*
[-D]	-R-	*
Unspecified	\emptyset /-E-	\emptyset /-E-

Thus the approach to Voice and *v*P presented in this paper provides an account of case marking and voice morphology in Japanese, a nominative–accusative language. Based on these results, it can be speculated that the languages that appear ‘ergative’ are simply those that assign a special case marking to the specifier of Voice[+D] with a valued φ ; this can be a dedicated ergative case, as in Niuean and Ulivivek, or a case that is also used elsewhere, as in Tagalog. While Japanese permits the same transitive configuration, it is not considered ergative simply because its Voice[+D] with valued φ does not assign any special marking.

One question that should be addressed when considering nominative–accusative languages is how to capture Burzio’s (1986) Generalisation, which states that accusative objects may only occur when there is also an external argument, i.e. when Voice has a specifier. In the bipartite nominal feature system developed in this paper (§3.3.3), nominative arguments should agree in *D* and φ with a nominal licenser, but I have proposed that accusative objects also agree in *D* and φ . How, then, does the syntax distinguish between the nominative subject of an unaccusative and the accusative object of a transitive, such that accusative-marked subjects of unaccusatives are ruled out? I have assumed that case assignment of (at least) objects and applicatives occurs upon agreement with a nominal licenser—which occurs upon Merge—such that nominative or accusative case is assigned on an object before the syntax sees whether Voice can introduce an external argument. The assumption of case assignment upon Merge may be necessary if bottom-up syntactic derivation, especially derivation by phase (Chomsky 2001), wherein the theme undergoes Transfer before the external argument enters the derivation, is to be taken seriously. A consequence of this assumption is that there must exist principles that are independent of nominal licensing that filter out constructions such as those with accusative-marked unaccusative subjects. The EPP, for example, might cause the derivation to crash if there is no nominative argument to fill the subject or pivot position in a clause. Thus Burzio’s Generalisation may have less to do with the licensing of the theme than principles that govern well-formed derivations more generally.

6 Conclusion

In this paper, I presented an approach to the interaction of Voice and *v*P which unifies ergative case assignment in ergative languages and the connection between overt voice distinctions and case in Austronesian-type voice systems and Japanese. I argued that syntactic transitivity is sensitive to φ -features rather than licensing, and that the interaction between the lexical features of Voice and valued φ -features derived on Voice has direct consequences for case assignment on external arguments, the overt realisation of voice morphology and the semantic interpretation of arguments. I also showed that my account of simple transitives in Austronesian-type voice languages readily extends to productive causatives, proposed to involve Voice over Voice.

I have limited the discussion in this paper to the behaviour of arguments within the extended *v*P projection, without detailed consideration of the role of T in case and agreement, as well as the EPP. However, my analysis acknowledges that T provides an additional locus of nominal licensing and φ -agreement in some languages. The role of T is especially important in addressing case and agreement in languages with overt phi-agreement with multiple arguments. I leave the interaction of *v*P nominal features and T for future work (but see Deal 2010; Clem 2017 for a related proposal).

A final concern that arises in the current approach is the question of selection within the extended *v*P. For example, it was noted in §4.2 that causatives of transitives in many languages cannot embed a Voice[+D] head with a valued φ -feature under another Voice[+D]. This restriction, which gives rise to the behaviour of *faire-par* causatives, can be viewed as either a selectional restriction of Voice[+D] on verbal functional heads with particular featural specifications or a constraint on the distribution of φ -features themselves. Clues to the right analysis will likely come from work in the domain of case and licensing, such as the behaviour of ditransitives and differential object marking; this is left for future research.

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