

Research Article

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Tense-aspect conditioned agent marking in Kanakanavu, an Austronesian language of Taiwan

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Abstract: This article examines two types of lexical effects in the voice system of Kanakanavu, an Austronesian language of Taiwan. The first concerns a well-attested phenomenon in the Austronesian literature: interactions between the semantic transitivity of verbs and their ability (or lack thereof) to undergo voice alternation. The second concerns a phenomenon that is typologically and areally rare in the western Austronesian context – differential agent marking. The pronominal agent in Kanakanavu’s patient-/undergoer-voice construction is differentially case-marked depending on the tense-aspect value of the clause. However, lexical effects are found in how the differentially marked agent is interpreted. When dynamic verbs are used, omitted agents in perfective clauses are interpreted as coreferential with a specific referent mentioned in prior discourse, but those in non-perfective clauses are interpreted as having generic reference, backgrounded, and/or not centrally involved in the situation expressed by the verb. When stative verbs are used, alternation between perfective and imperfective verb forms may have various effects on the interpretation of the agent. In some stative verbs, the agent is interpreted as a prototypical semantic agent in the perfective, but as a semantic experiencer in the imperfective. In other stative verbs, the perfective/non-perfective alternation has to do with whether a change of state is involved, without having any effects on agent interpretation. This study explores how lexical effects manifest across both elicited and natural discourse data. It also presents the phenomenon of differential agent marking in Kanakanavu as neither typical nor representative in the western Austronesian context.

Keywords: western Austronesian voice, differential argument marking, tense-aspect marking, information structure, referent tracking, predicate classes

1 Introduction

The present study examines lexical effects in the voice system of Kanakanavu, a critically endangered Formosan language spoken in southern Taiwan. The goal of this article is two-fold. First, it aims to provide a description of the Kanakanavu voice system, with particular attention paid to what lexical effects can be identified when it comes to voice alternation. Second, it draws attention to a grammatical phenomenon in Kanakanavu that is not widely attested in other western Austronesian languages: a specific argument

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role – to be referred to as the non-PSA agent – is differentially case-marked when realized as a pronoun.¹ Although the differential marking is conditioned by tense-aspect marking on the verb, lexical effects can still be observed: the differentially marked agent is subject to different referential interpretations depending on whether dynamic verbs or stative verbs are involved, with stative verbs further exhibiting lexical idiosyncrasies. Through examining Kanakanavu, this article explores how lexical effects may have different implications for syntactic and discourse-referential properties of grammatical relations. It also broadens the horizon concerning the type of evidence that may come into play regarding lexical effects on grammatical relations – namely, evidence from the behavior and interpretation of grammatical relations in discourse, which can be shed light on through data drawn from natural speech. The findings will also contribute to further research into the crosslinguistic variation of Austronesian voice, where new data from Kanakanavu, an endangered but understudied language, may provide new perspectives.

The article is organized as follows. An introduction to Kanakanavu and description of its voice system is provided in Section 2, where special attention is paid to how the semantic transitivity of a verb may interact with its ability to undergo voice alternation. In Section 3, the discussion turns to the syntactic implications of voice, where case marking of argument status and the syntactic behaviors of grammatical relations (regarding relativization and control) come into play. Section 4 then zeroes in on a specific argument role – to be referred to as the non-PSA agent – which is demonstrated in the preceding section to receive differential marking when occurring as a pronoun. It is shown that although the differential marking is conditioned by a highly grammaticalized phenomenon – tense-aspect marking on the verb – lexical effects can still be observed, where verbal semantics interacts closely with how the non-PSA agent is interpreted. Section 5 concludes the study by emphasizing that lexical effects in Kanakanavu can be shown to interact with voice alternation, tense-aspect marking, and differential agent marking. Implications of the findings for typological exploration of Austronesian voice are also briefly entertained.

2 Kanakanavu voice

Kanakanavu is a critically endangered language currently spoken by fewer than 10 people in the Namasia District of Kaohsiung, southern Taiwan (Liu et al. 2015). As a Formosan language, Kanakanavu is positioned outside of the Malayo-Polynesian subgroup of the Austronesian language family; however, its genealogical place within the family is still under debate, with several hypotheses positing different positions within the family (e.g., Starosta 1995, Ho 1998, Blust 1999, Sagart 2004, Ross 2009, Zeitoun and Teng 2016, Aldridge 2016). Kanakanavu had been an understudied and underdocumented language despite descriptive and analytic materials produced in the seminal work by Tsuchida (1976). In recent years, nevertheless, a plethora of studies have aimed to (re-)examine the language, including works with particular attention paid to its voice system (e.g., Liu 2014, Zeitoun and Teng 2016, Teng and Zeitoun 2016, Wild 2018), and a descriptive grammar covering a wide range of topics (Sung 2018).

The goal of this section is to provide an overview of the Kanakanavu voice system, with particular attention paid to lexical effects on voice alternation. The discussion first details how voice is morphologically marked (Section 2.1); it then examines how verbs may or may not alternate across voice categories, where semantic transitivity plays a central role (Section 2.2).

¹ The non-PSA agent represents an agentive argument role that is not grammatically realized as the PSA (Privileged Syntactic Argument), the highest ranked grammatical relation in the clause. Section 3.1 is about properties of the PSA in Kanakanavu.

2.1 Morphological voice marking

Kanakanavu differs from prototypical Philippine-type languages in its voice system as it exhibits a binary voice opposition, instead of a more commonly found four-way voice distinction.² As can be seen in (1), a semantically transitive event such as SEE, which involves both an agent (semantic experiencer) and a patient (semantic stimulus), can be packaged in either the agent-voice or patient-voice construction.³ In the agent-voice construction, the clause-initial predicate position is occupied by an agent-voice verb, such as *cumú'ula* /c<um>u'ula/ 'see (agent voice)' in (1a). In the patient-voice construction, a patient-voice verb is involved instead, such as *cú'úle* /cú'ula-i/ 'see (patient voice)' in (1b).⁴

- (1) Examples of agent-voice and patient-voice clauses⁵
- a. *cumacu'ula* *'akúa* *mamálang.*
 c<um>a-cú'ula 'ikua ma-marangú
 <AV>Ca-see 1SG.OBL RED-old
 'The elders were looking at me.' (1002-UKP:65) (Agent Voice)
- b. *cú'úle* *kúa,* *tinúa=máku.*
 cú'ula-i 'ikua tinua=maku
 see-PV.PFV 1SG.OBL hunting.trap = 1SG.GEN
 'I looked at my hunting trap.' (1011-MKN:126-127) (Patient Voice)

There is one crucial morphological difference between agent-voice and patient-voice verbs in Kanakanavu: agent-voice verbs may or may not be morphologically marked for their voice status, whereas patient-voice verbs

² The Kanakanavu voice system has been subject to various analyses. Earlier studies generally describe the language as exhibiting a three-way voice distinction, where the system lacks what is equivalent to the circumstantial-voice construction in a typical Philippine-type language (Tsuchida 1976, Mei 1982). In recent studies, Kanakanavu may be characterized as exhibiting a four-way (Wu 2006), three-way (Liu 2014, Cheng and Sung 2015, Sung 2018) or binary voice distinction (Teng and Zeitoun 2016, Zeitoun and Teng 2016, Wild 2018). The present study is in line with the latter group of scholars. As convincingly argued by Teng and Zeitoun (2016), constructions in Kanakanavu that appear to correspond to Philippine-type locative voice and circumstantial voice (involving the suffixes *-a(n)* and *si-/se-*, respectively) serve nominalization, instead of verbal voice, functions. Teng and Zeitoun, however, do not analyze the suffix *-ai* as being part of the indicative patient-voice paradigm. As seen below, *-ai* is analyzed as the perfective patient-voice marker in this article.

³ Western Austronesian voice constructions are grammatical options that are available for packaging semantically transitive events. The determining factors that influence speakers' choice of a construction are usually rooted in discourse-referential properties of the participants involved (e.g. Mithun 1994, Huang 2002, Liao 2004, Huang and Tanangkingsing 2011), instead of semantic conditions such as animacy or person hierarchy, as is the case in direct-inverse voice systems (the study by Haude and Zúñiga 2016, 458–61 shows a comparison of the two types of voice systems). Due to the focus on lexical effects of this study, the factors that influence Kanakanavu speakers' voice-construction choice will not be discussed.

⁴ Kanakanavu exhibits many complex morphophonological processes, including many types of vowel-feature spreading and segment deletion. Throughout this article, therefore, Kanakanavu forms that are discussed in the main text will be provided with both surface and underlying representations, in order to elucidate their morphological structure. The reader may notice that prosodic prominence is only represented in the surface form. This is because word-level prosody is analyzed as assigned at the surface word level only. A detailed phonological analysis of prominence assignment can be found in the study by Cheng (2020). The reader may also refer to Chen (2016) for discussion of other aspects of Kanakanavu morphophonology.

⁵ All Kanakanavu examples included in this article are from first-hand data collected by the author in collaboration with language activists from the Kanakanavu community. Unless otherwise noted (where data are indicated as "elicited" or "offered"), all interlinear-gloss examples are based on audio or audiovisual recordings of Kanakanavu natural speech. The first line of an interlinear gloss includes surface word forms. The surface representations are transcribed with prosodic prominence indicated by either acute accents or circumflexes. In addition, commas, periods, and em dashes are included to represent intonation-unit boundaries (for continuing, final, and truncated intonation contours, respectively), according to a modified version of the transcription convention outlined in Du Bois et al. (1993). The second line of an interlinear gloss includes underlying word forms with morpheme boundaries indicated. Morpheme-by-morpheme glosses are given in the third line, except for truncated words (indicated with a hyphen at the end), disfluencies, and pause fillers (*u*, *unco* or *eh*). The fourth line includes the free English translation of each example, along with additional information (included in parentheses) indicating archival information (recording number, speaker index, and line/intonation-unit number).

Table 1: Examples of Kananavu agent-voice verbs

Agent-voice verb	Agent-voice marker	Gloss
tumáŋgi /t<um>angi/	<um>	cry
mupána'ʉ /mu-pana'ʉ/	mu-	shoot
míma /m-ima/	m-	drink
pú'a /pu'a/	∅	buy
macái /macai/	∅	die
tavalu'ʉ /taavala'ʉ/	∅	know

are always morphologically marked. An example of an agent-voice verb marked by an agent-voice marker is the verb *cumú'ula* /c<um>ʉ'ula/ 'see (agent voice)' shown in (1a), where the agent-voice marker <um> is involved. Depending on the specific morphological verb class, agent-voice verbs may be marked by other agent-voice markers, such as prefix *m-* or prefix *mu-*, or not involve any voice marker at all. Examples of some agent-voice verbs in the language are listed in Table 1.⁶

Examples of some patient-voice verbs in Kananavu are provided in Table 2. In addition to always being marked for voice, patient-voice verbs are also always marked for tense-aspect-mood. All the examples included below are indicative verbs occurring in the perfective, where the perfective patient-voice marker *-ai* is involved⁷ (reducing to *-i* when combining with some stems ending in the low vowel /a/).⁸

Furthermore, every patient-voice verb has a morphologically related agent-voice counterpart. The morphological relationship can be **symmetrical**. In this case, a given verb stem combines with a patient-voice marker to form a patient-voice verb, and the same stem can be marked with an agent-voice marker to form the agent-voice counterpart of the verb. For example, the patient-voice verb *íme* /ima-i/ 'drink (patient voice perfective)' involves the (perfective) patient-voice marker *-ai* attached to the stem *ima*; its agent-voice counterpart *míma* /m-ima/ 'drink (agent voice)' involves the same stem, but is marked by the agent-voice marker *m-* instead. On the other hand, the morphological relationship may also be **asymmetrical**: a patient-voice verb is formed by attaching a patient-voice marker onto a verb stem, and the stem can occur as a (voice-unmarked) agent-voice verb without any overt morphological marking. For example, the patient-voice verb *po'ocípe* /po'ocip-ai/ 'cook (patient voice perfective)' involves the (perfective) patient-voice marker *-ai* combining with the stem *po'ocipi*, and the stem can occur as an agent-voice verb on its own without any overt affixation: *po'ocípi* /po'ocipi/ 'cook'.⁹ Some more examples of the two types of voice alternation are provided in Table 3.

⁶ Throughout this article, verbs mentioned in text that are marked for voice will be glossed with the marked voice category indicated in between parentheses. Since agent-voice verbs may be unmarked for voice, a verb gloss that does not include indication of voice implies agent-voice status.

⁷ Across the majority of Formosan languages, perfective patient-voice status is generally marked by morphemes in the form of infix <in> (Zeitoun et al. 1996). This form corresponds to the prefix *ni-* (which has an allomorphic variant <in>) in Kananavu. As discussed in the next section, however, Kananavu *ni-* is analyzed as a perfect patient-voice marker instead. Indicative verb forms that are marked by a patient-voice marker in the form of *-ay* (corresponding to Kananavu *-ai*) are very rare across Formosan languages; in addition to Kananavu, they appear to be found in Puyuma only. However, in Puyuma, the suffix *-ay* serves as a locative-voice marker and contrasts functionally with the patient-voice marker *-aw* and the circumstantial-voice marker *-anay* (Teng 2008).

⁸ Stems that end in /a/ differ in whether they trigger the suffix *-ai* to reduce to *-i* or not. As seen in Table 2, the suffix *-ai* reduces to *-i* when combining with the stem *cu'ula* 'see', but not when combining with the stem *ala* 'take'. Evidence for the reduction comes from prosodic prominence assignment. It remains to be seen what synchronic or diachronic factors contribute to a stem's triggering of the reduction.

⁹ The stem-final /i/ is an echo vowel, which drops before a suffix is attached. Stem-final echo vowels (which may be in the shape /i/, /u/ or /ʉ/) are not represented in the underlying form of a word when a suffix is involved in the morphological structure. Studies by Tsuchida (1976, 2003), Chen (2016), and Cheng (2020) give more detailed discussions on, and analyses of, echo vowels in Kananavu.

Table 2: Examples of Kanakanavu patient-voice verbs (in the perfective)

Patient-voice verb	Patient-voice marker	Gloss
kúne /kʉn-ai/	-ai	eat
cʉ'úle /cʉ'ula-i/	-ai	see
alái /ala-ai/	-ai	take
amanúnge /a-manʉng-ai/	-ai	feel good
alakuláce /ala-kulac-ai/	-ai	angry
tavalá'e /taavala'-ai/	-ai	know

Table 3: Examples of symmetrical and asymmetrical voice alternation

Patient-voice verb	Agent-voice counterpart	Gloss	Type of alternation
vuái /vua-ai/	múvua /mu-uvua/	give	Symmetrical
timáne /timana-i/	túmmana /t<um>imana/	listen	Symmetrical
kóle /kool-ai/	kumólu /k<um>oolu/	dig	Symmetrical
kamanúnge /kaamanʉng-ai/	kaamanúngu /kaamanʉngu/	make	Asymmetrical
loimé /looimi-ai/	lóimi /looimi/	forget	Asymmetrical
tavalá'e /taavala'-ai/	tavalá'ʉ /taavala'ʉ/	know	Asymmetrical

2.2 Lexical effects on voice alternation

A well attested feature of western Austronesian voice systems is that not all verbs can undergo voice alternation (e.g., Starosta 2002, Huang 2005), and Kanakanavu is no exception. Generally speaking, in Kanakanavu, voice alternation is possible for verbs that package semantically transitive events, where both an agent and a patient are involved in the verb semantics, as has been exemplified in (1).¹⁰ Another example of semantically transitive event packaged in either an agent-voice clause or a patient-voice clause is provided in (2). Here, the verb stem *ala* ‘take’ is involved, and the voice alternation is between the agent-voice verb *umâla* /um-a-ala/ ‘take (agent voice imperfective)’¹¹ and its patient-voice counterpart in the perfective *alái* /ala-i/ ‘take (patient voice imperfective)’:

(2) Voice alternation involving the stem *ala* ‘take’

- a. *tia, umâla sua, tinín na:, na, rócu tanása.*
tia um-a-ala sua tini-in na rocu tanasa
 FUT AV-IPFV-take CTRV hang-PV.IPFV LOC bottom house

‘(They) would take what was hung beneath the house.’ (1010-PKP:116-120)

- b. *alái=kán sua nanáku:, ʉ vú'ʉ,*
ala-i=kani sua nanakʉ vʉʉ'ʉ
 take-PV.PFV=EVI CTRV woman pomelo
 ‘The woman took the pomelos.’ (1008-PKP:64-65)

¹⁰ Transitivity is a complex topic in the description and analysis of Austronesian languages (see, for example, Ross 2002). The discussion in this article is solely concerned with *semantic transitivity*. Although semantic transitivity can involve multiple factors (Hopper and Thompson 1980), this article treats semantically intransitive events as involving only one participant, and semantically transitive ones as involving two (or more) participants. In order not to diverge too much from the focus on lexical restrictions, this article will not present an analysis of syntactic transitivity in Kanakanavu.

¹¹ Depending on the morphological verb class, the imperfective in an agent-voice verb may be marked by prefix *a-* or *Ca-* reduplication.

Still another example can be seen in (3), which involves the verb stem *vua* ‘give’ derived as the agent-voice verb *móvua*/ *mu-a-vua*/ ‘give (agent voice imperfective)’ and its patient-voice counterpart *vún* ‘give (patient voice imperfective)’:

- (3) Voice alternation involving the stem *vua* ‘give’
- a. *misen=kasu movua ’ikua kuici mamia,*
miseni=kasu mu-a-vua ’ikua kuici mamia
 why=2SG AV-IPFV-give 1SG.OBL peel only
 ‘Why were you giving me peels only?’ (1018-AKN:121-123)
- b. *vún=aku nía, can pótí. vutúkulu.*
vua-ún=maku ’inia cani poti vutúkulu
 give-PV.IPFV=1SG.GEN 3OBL one cloth.bag fish
 ‘I would give them a full bag of fish.’ (1013-MKN:56-58)

Many agent-voice verbs that package semantically intransitive events, such as *’umúcan* /’<um>úcan/ ‘rain (agent voice)’ and *musúcaru* /musucarú/ ‘slip’, do not show patient-voice counterparts. Some semantically intransitive agent-voice verbs, however, do, and the usage of the derived patient-voice verbs would allow for a transitive construal of the event in question. An example is the motion verb *mukúsa* /m-u-kusa/ ‘go (agent voice)’, whose patient-voice counterpart (in the perfective) is *ukúse* /u-kusa-i/ ‘go (patient voice perfective)’. As evidenced in discourse, the agent-voice form of the verb is typically used when the semantic goal is an inanimate location (4a), while the patient-voice form is typically used when an animate goal is involved instead (4b). In the latter case, the verb is typically interpreted as ‘approach’, suggesting that the animate goal is construed as a patient involved in a transitive event.

- (4) Verb stem *u-kusa* ‘go’ occurring in agent voice and in patient voice
- a. *mukúsa=ku nía,*
m-u-kusa=ku ’inia
 AV-motion-toward=1SG 3.OBL
 ‘I went there’. (1011-MKN:114)
- b. *makasúa=cu, ukúse sua unco, kaniarúme sua tamkaráram,*
makasua=cu u-kusa-í sua kaniarume sua tamkararam
 like.that=COS motion-toward-PV.PFV CTRV pangolin CTRV civet
 ‘Then, the Pangolin approached the Civet.’ (AKN-1018:190-193)

The agent-voice verb *mácaca* /maacaca/ ‘laugh’ also shows a patient-voice counterpart, whose imperfective form is *pacacún* /paacaca-ún/ ‘laugh (patient voice imperfective)’.¹² As can be seen in (5a), whereas usage of the agent-voice verb implies that only a semantic experiencer (i.e., “laugher”) is involved, the interpretation of its patient-voice counterpart, as in (5b), clearly shows that the packaged event (LAUGH) is presented as being directed at an additional patientive participant (the one being “laughed at”).

- (5) Verb stem *maacaca~paacaca* packaged in agent voice and patient voice
- a. *mácaca=kán sua unco, tamkáraram,*
maacaca=kani sua tamkararam
 laugh=EVI CTRV civet
 ‘The civet laughed.’ (1018-AKN:261-262)

¹² This specific verb stem alternates between an *m*-initial form and a *p*-initial form depending on whether it is derived as an agent-voice or patient-voice verb. This type of *m~p* alternation is widely attested across Formosan languages (Ross 2015).

Table 4: Semantically intransitive agent-voice verbs with(out) morphologically related patient-voice counterparts (in the perfective)

Agent-voice verb	Patient-voice counterpart	Gloss
iváta /i-vata/	iváte /i-vata-i/	come
mucán /mu-caanɯ/	—	leave
móca /mu-aca/	—	walk
mati'avásu /mati-'avasɯ/	pati'aváse /pati-'avas-ai/	stick tongue out
tumáŋgi /t<um>angi/	—	cry
macái /macai/	—	die

- (b) *pacacán sua, sua unco, eh, kaniarúme,*
*paacaca-**un** sua kaniarume*
laugh-PV.IPFV CTRV pangolin
 '(They) were laughing at the pangolin.' (1018-AKN:550-554)

Importantly, whereas voice alternation is possible for the aforementioned two cases, this may not be the case for other agent-voice verbs with similar semantics, where considerable lexical idiosyncrasies are observed. As can be seen in Table 4, a patient-voice form is found for the motion verb – *ivátu* 'come' – but not for the verbs *mucán* 'leave (agent voice)' or *móca* 'walk (agent voice)', both of which indicate motion; furthermore, agent voice is also the only possibility for the stems *tangi* 'cry' and *macai* 'die', whereas the stem *mati'avasu* 'stick one's tongue out' can derive as both agent-voice and patient-voice forms.

3 Grammatical relations and agent marking

In addition to serving to package different types of events, voice constructions in Kanakanavu also have implications for grammatical relations in the verbal clause. Similar to what is observed in many western Austronesian languages, every instance of the verbal clause in Kanakanavu involves an event participant that is realized as the **PSA**. In addition to the PSA, there is at least one other type of (non-PSA) grammatical relation that can be identified in Kanakanavu – the non-PSA agent. The latter exhibits an atypical feature under the western Austronesian context: it is differentially case-marked when occurring as a pronoun. Section 3.1 introduces the notion of the PSA, focusing on its property of being the highest ranked argument in the clause. Section 3.2 then turns to other non-PSA participants, with emphases on how the non-PSA agent is differentially marked and how its properties contrast with those of other participant types.

3.1 The PSA

Different from prototypical Philippine-type languages, where PSA status¹³ is indicated by case markers (Himmelmann 2005, Chen and McDonnell 2019), in Kanakanavu PSA status of a phrase is morphologically

¹³ The PSA has received various labels in the western Austronesian literature, including focus, topic, nominative, absolutive, pivot, trigger, etc. Many studies have employed the more transparent and theoretically neutral label "subject" for referring to the PSA as the privileged grammatical relation (e.g., Ross and Teng 2005, 752–3). However, "subject" often has information-structure-related and cognitive-linguistic implications regarding activation and cognitive load in discourse (e.g., Chafe 1994, 82–92). This article avoids using "subject" because it recognizes that more research is still required to determine how the PSA behaves with regard to these features in comparison to other grammatical relations in Kanakanavu.

Table 5: Pronominal forms in the unmarked case

Person-number	Free	Bound
1SG	íku/ikía	=ku/=kia
1PL.INCL	íkita	=kíta
1PL.EXCL	íkimi	=kími
2SG	íkasu	=kásu
2PL	íkamu	=kámu
3SG	nguáin	—
3PL	nguáni	—

marked only when it occurs as a pronoun.¹⁴ Pronominal PSAs obligatorily occur in what is referred to as the **unmarked case** in this article.¹⁵ The case forms across all person-number categories are listed in Table 5. Unmarked-case pronouns in Kanakanavu fall under two categories – free/independent and bound/clitic – except in the third person, where only free pronouns are found. Note that there are interchangeable forms across free and bound pronouns in the first-person singular.¹⁶ In the first-person plural, there is also a distinction made between inclusive and exclusive forms, a phenomenon widely found across Austronesian languages.¹⁷

As in other western Austronesian languages, a major function of voice in Kanakanavu is to map different semantic roles onto the PSA of the clause. In patient-voice clauses, it is always the patient that serves as the PSA. This can be seen in the patient pronouns in (6) occurring in the unmarked case.¹⁸

(6) Unmarked-case pronouns representing the PSA in patient-voice clauses

- a. 'akún=**ku**, piakakái.
 'akuni=ku piaakaaka-ai
 PROH=1SG harm-PV.SBJV
 'Do not harm **me**!' (1009-MKN:60-61)
- b. pilalucinó=**ku**.
 pila-lucini-au=ku
 offer-two-PV.IMP=1SG
 'Offer **me** two (of the pomelos)!' (1007-MKN:83)

In agent-voice clauses, on the other hand, the semantic role depends on whether the verb encodes a semantically intransitive or transitive event. When a semantically intransitive event is involved, the single participant involved serves as the PSA, and the semantic role can vary: in (7a), the PSA represents a

¹⁴ This analysis is in contrast to several previous studies on Kanakanavu, where the marker *sua* is often analyzed as a marker of PSAs realized as lexical noun phrases (often referred to as the nominative-case marker) (Zeitoun and Teng 2016, Sung 2018). However, the marker *sua* is found to mark non-PSA participants as well (Tsuchida 1976); it has also been argued to be better analyzed as serving referential-pragmatic (Wild 2018) or information-structure-related (Cheng 2018), instead of grammatical, functions. *sua* is treated as a contrastive marker in this study (glossed as “CTRV”).

¹⁵ The unmarked case corresponds to what is often labeled the *nominative case* across Formosan languages.

¹⁶ The forms *ikía* and *=kía* are often used when the speaker holds a higher social status than the addressee. A common scenario where the forms are used is when an elder addresses a young(er) community member.

¹⁷ In the western Austronesian literature, whether the PSA is tied to a specific grammatical relation remains an unsettled issue. In particular, under one specific analytic approach, the PSA is associated with topic selection, and voice alternation is treated as encoding a change in information structure (e.g. Richards 2000, Pearson 2005, Rackowski and Richards 2005, Chen 2017). In this article, the PSA in Kanakanavu is identified as a grammatical relation based on identifiable grammatical properties associated with it. Whether voice alternation is a purely information-structure-related phenomenon in Kanakanavu requires further research and may depend on the specific theoretical framework adopted.

¹⁸ (6a) is a patient-voice clause occurring in a non-indicative mood – the subjunctive mood. The subjunctive patient-voice marker is homophonous with the (indicative) perfective patient-voice marker, both in the form *-ai*.

semantic experiencer, and in (7b), it represents a semantic theme. If an agent-voice clause encodes a transitive event, then the PSA always assumes the agent role, as can be seen in the pronouns in (7c–d).¹⁹

(7) Unmarked-case pronouns representing the PSA in agent-voice clauses

- a. *mánasi, mâcangcangálu=kía.*
 manasi macangcangalu=kia
 so.that happy=1SG
 ‘[...] so that I would be happy.’ (1011-MKN:246-247)
- b. *maráng=ci=kía,*
 marangu=cu=kia
 old=COS=1SG
 ‘I am old now.’ (1007-MKN:133)
- c. *kó=ku akanángu kalí=musu.*
 ko=ku akanangu kali=musu
 NEG.PFV =1SG understand speech=2SG.GEN
 (agent) (patient)
 ‘I did not understand your words.’ (Offered)
- d. *nikamanúng=ku, tára.*
 ni-kaamanungu=ku tara
 PRF-create =1SG hunting.trap
 (agent) (patient)
 ‘I made the Tara hunting trap.’ (1011-MKN:112-113)

The PSA is the highest ranked grammatical relation in the clause. Syntactically, it also represents the only phrase that can be relativized on. Therefore, if a head noun of a relative clause assumes the patient role, the subordinate verb occurring in the relative clause is restricted to occur in patient voice, as in (8a). If the relativized participant assumes the agent role, then the relative clause always occurs in the agent-voice construction, as in (8b).²⁰ The latter pattern aligns syntactically with relative clauses which package semantically intransitive events, where agent-voice verbs are used and the single participant is relativized on (8c).

(8) Voice and relative clauses in Kanakanavu

- a. *sua, némuḱu ké sua vú’u ia,*
 sua [ni-umukū ke]RC sua vuu’u ia
 CTRV PV.PRF-plant 3.GEN CTRV pomelo TOP
 ‘As for the pomelos [that he had planted] [...]’ (AKN-1016:521-522)
Relativized patient, RC in patient voice
- b. *’una nipókali kúa:, pakísia.*
 ’una [ni-puu-kali ’ikua]RC pakisia
 EXIST PRF-utter-speech 1SG.OBL Southern.Min
 ‘There was a Southern Min person [who had invited me].’ (MKN-1009:8-9)
Relativized agent, RC in agent voice

¹⁹ The labels “agent voice” and “patient voice” chosen for the two verbal voice categories in Kanakanavu, therefore, reflects the systematic mapping of agents and patients, respectively, onto the PSA role when semantically transitive events are packaged in the verbal clause. In agent voice, it is always the agent that serves as the PSA, and in patient voice, it is always the patient.

²⁰ A syntactic function of the voice alternation is therefore to maintain the PSA as the *pivot* (Van Valin and LaPolla 1997, 275) in relativization. This is also commonly known as the “pivot-only” constraint on relativization in the western Austronesian literature.

- c. 'éhi nía vavúlu 'umô'ukúku.
 'esi 'inia vavulu ['<um>a'ukuku]_{RC}
 EXIST 3.OBL wild.pig <AV>howl
 'Over there was a wild pig [that had been howling]' (MKN-1011:50)
Relativized sole participant, RC in agent voice

3.2 The non-PSA agent and other non-PSA participants

In addition to the PSA, a specific type of non-PSA grammatical relation in Kananavu deserves special attention – the non-PSA agent in patient-voice clauses. In many western Austronesian languages, the non-PSA agent is consistently case-marked (often in the genitive case, see De Guzman 2000). In Kananavu, however, the non-PSA agent occurs in two alternating cases when occurring as a pronoun, which is conditioned by the tense-aspect value of the clause.

Tense-aspect is highly grammaticalized in Kananavu: all indicative verbs show a **perfective** form, which contrasts with at least one of two non-perfective forms: the **imperfective** and the **perfect**. In patient voice, all perfective verbs are marked by the perfective patient-voice marker *-ai*. Patient-voice verbs also always show an imperfective form, which is marked by the imperfective patient-voice marker *-un*. Some patient-voice verbs lack a perfect form, but for those that do show a perfect form the perfect patient-voice marker *ni-* is involved.²¹ Table 6 includes examples of indicative patient-voice verbs and their tense-aspect forms. Notice here that the verbs that lack perfect forms appear to have rather stative, less dynamic semantics. Section 4.2 will return to this phenomenon when discussing how the non-PSA agent is interpreted in the usage of stative patient-voice verbs.

Tense-aspect marking typically corresponds to different types of temporal construals on the packaged event. The different temporal construals can be exemplified by elicited patient-voice clauses involving the stem *kũũũ* 'eat' as in (9). First, the perfective–imperfective distinction is based on whether explicit reference is made to the internal temporal structure of the event (Comrie 1976). The perfective (*kũne* /*kũũũ-ai*/) serves to indicate that no such reference is made, where the event is simply presented as having occurred (9a). In contrast, the imperfective (*kũnũn* /*kũũũ-un*/) presents events characterized by different temporal structures, such as progressive, habitual, or future events; in (9b), it serves to indicate the latter two. Similar to the perfect in a variety of languages, the perfect in Kananavu may fall under several semantic types. The example in (9c) (*nikũn* /*ni-kũũũ*/) serves to indicate either a continuing state resulting from a prior event (i.e., the “stative” perfect) or an event that had happened not long ago from speech time (i.e., the “hot news” perfect) (Ritz 2012). While it is worth further investigating the functional differences across the tense-aspect categories marked on the verb, for the purpose of this article the discussion that follows will focus on the agent that occurs across the three patient-voice clause types when realized as a pronoun. In the perfective (9a), it occurs in the **oblique** case. In non-perfectives (9b and c), it occurs in the **genitive** case.²²

(9) Indicative patient-voice verb forms sharing the stem *ala* 'take'

- a. *kũne* *'ikũa* *alám.*
kũũũ-ai *'ikua* *alamũ*
 eat-PV.PFV 1SG.OBL meat
 'I ate the meat.' (Elicited)

Perfective: pronominal agent in the **oblique**

²¹ The suffix *-un* is realized as *-in* when attached to a stem ending in the /i/ vowel. The suffix-initial vowel also undergoes vowel coalescence when the stem ends in a vowel. The prefix *ni-* is realized as infix *<in>* when it is attached to a coronal-initial stem, such as *cu'ula* 'see'.

²² The final vowel of the stem *kũũũ* 'eat' is deleted when a suffix or enclitic is attached. The first-person singular genitive pronoun =*máku* is realized as =*áku* when attached to a host ending in a nasal consonant.

Table 6: Indicative patient-voice verbs and tense-aspect alternations

Perfective (-ai)	Imperfective (-un)	Perfect (ni-)	Gloss
kúne /kʉn-ai/	kúnun /kʉn-un/	nikún/ni-kʉnʉ/	eat
cʉ'úle /cʉ'ul-ai/	cʉ'ulún /cʉ'ula-un/	cinú'ula/c<in>ʉ'ula/	see
alái /ala-i/	alún /ala-un/	niála/ni-ala/	take
amanúnge /a-manung-ai/	amanúngun /a-manung-un/	—	feel good
alakuláce /ala-kulac-ai/	alakulácun /ala-kulác-un/	—	angry
tavalá'e /taavala'-ai/	tavalá'un /taavala'-un/	—	know

b. *kúnun=áku* *alám.*

kʉn-un=maku alamʉ

eat-PV.IPFV=1SG.GEN meat

'I (will/would) eat the meat.' (Elicited)

Imperfective: pronominal agent in the **genitive**

c. *nikún=áku* *alám.*

ni-kʉn=maku alamʉ

PV.PRF-eat=1SG.GEN meat

'I have eaten the meat.' (Elicited)

Perfect: pronominal agent in the **genitive**

Different from the unmarked-case pronouns, all oblique pronouns are free/independent. Their forms across person-number categories are listed in Table 7. Note here that in the third person category, there is no further distinction between singular and plural, which is nevertheless present in the unmarked-case pronouns.

Importantly, the oblique is also the obligatory case form for non-agent event participants that are also not serving as the PSA. Some examples can be seen in (10), where the oblique pronouns may represent a range of non-agent roles, including a semantic goal (10a) or a semantic stimulus (10b) in agent-voice clauses. An example of a semantic recipient occurring as an oblique pronoun in patient voice is shown in (10c).²³

(10) Non-PSA participants occurring as oblique pronouns

a. *iávatu* *kúa* *micíko.*

i-a-vatu 'ikua miciko

motion-IPFV-COME 1SG.OBL M.

(location)

'Michiko would come to/towards me.' (1013-MKN:72)

b. *cumacu'úla* *'ikúa* *mamálang.*

c<um>a-cʉ'ula 'ikua ma-marangʉ

<AV>RED-see 1SG.OBL RED-old

(stimulus)

'The elders were looking at me.' (1002-UKN:65)

c. *vún=aku* *nía,* *can* *póti.* *vutúúulu.*

vua-un=maku 'inia cani poti vutukulu

give-PV.IPFV=1SG.GEN 3.OBL one cloth.bag fish

(recipient)

'I would give them one full bag of fish.' (1013-MKN:56-58)

The genitive case forms across person-number categories are listed in Table 8. Similar to the unmarked-case pronouns, a mix of bound and free pronouns can be found in the genitive case. Similar to the oblique

²³ The first-person singular and third-person pronouns may occur in reduced forms *kúa* and *nía*, respectively, in spontaneous speech. In (10c), the patient is a semantic transported theme, which serves as the PSA of the clause.

Table 7: Pronominal forms in the oblique case

Person number	Oblique pronoun
1SG	'íkua
1PL.INCL	kitána
1PL.EXCL	kimía
2SG	kasúa
2PL	kamúa
3	'inía

Table 8: Pronominal forms in the genitive case

Person-number	Genitive pronoun
1SG	=máku
1PL.INCL	=míta
1PL.EXCL	=mía
2SG	=musu
2PL	=mu
3	ké

pronouns, there is also no further distinction made between singular and plural in the third person. As can be seen in (11), the genitive case may also be used for representing possessors in the nominal domain.²⁴ Again, this is only found when possessors are realized as pronouns.

(11) Possessors occurring as genitive pronouns

- a. *alisíko tanáha=máku mé.*
 ali-sik-au tanasa=maku mise
 manipulate-clean-PV.IMP house =1SG.GEN QUOT
 (possessor)

“Clean **my** house!”, (they)’d say.’ (1002-UKN:77)

- b. *makásua mámia sua, kalí=maku,*
 makasua mamia sua kali=maku
 like.that only CTRV speech =1SG.GEN
 (possessor)

‘**My** speech was just like that.’ (1007-MKN:147-148)

The oblique case-marking of the pronominal non-PSA agent in the perfective may suggest that it aligns in syntactic status with other non-PSA participants which are also non-agents, since the latter also occurs in the oblique case when realized as pronouns, as has been shown in (10). However, at least one piece of evidence exists to show that the two are syntactically distinct: only the former can serve as the **obligatory controller** of an omitted agent in a complement clause.²⁵ In (12a), for example, the third-person oblique pronoun *'inía*, which realizes the non-PSA agent of the matrix verb *alái* /ala-i/ ‘take (patient voice

²⁴ In the third person, however, the genitive pronoun *ké* can only be used to mark pronominal possessors for nouns derived from two specific (patient) nominalizers *-un* and *ni-* (e.g., *sinikupu* /s<in>iukpu/ *ké* ‘their/his/her pile’, derived from the stem *sikupu* ‘pile up’). For all other types of nouns, the pronominal possessor occurs in what is analyzed as the possessive-case pronoun *=ini*. Because the focus of this article is on event participants (and not possessors) only genitive pronouns will be discussed. The reader is referred to the study by Teng and Zeitoun (2016, 142) for a different analysis that treats the Kanakanavu genitive-case category as further distinguishing between the possessor form *-ini* and what they call the “nonsubject actor” form *ke* in the third person. In their analysis, the former is restricted in the nominal domain, and the latter is used solely for non-PSA agents in the verbal domain.

²⁵ The complement clause is restricted to occur in agent voice only, a widely attested phenomenon across Formosan languages (cf. Chang 2006). See also Chang (2004) for discussion on control as evidence for argument status in Formosan languages.

perfective)’, serves as the controller of the omitted agent in the complement clause that follows. In other words, the omitted agent in the complement clause is obligatorily interpreted as being coreferential with the non-PSA agent (*’inia* ‘they’) in the matrix clause. In contrast, the oblique second-person singular pronoun *kasúa* in (12b), which is a non-PSA recipient in the matrix clause, cannot serve as the controller of the omitted agent in the complement clause. Notice here that the complement verb is causativized (*’apakún* /’apa-kũũũ/ ‘make eat’) so that the agent in the complement clause (assuming the causer role) is coreferential with the PSA (first-person singular pronoun =*ku*), instead of the non-PSA oblique recipient (second-person singular pronoun *kasúa*) in the matrix clause.

(12) Control: possible for the non-PSA agent but not for other non-PSA participants

- a. *alé ’inia, umávici, tanása,*
 ala-ai ’inia_i [um-avici tanasa _i]COMP
 take-UV 3.OBL AV-bring house
 ‘They_i took (it) [_i to bring (it) home].’ (1033-AKN:183-186)
- b. *té=ku mívua kasúa ’apakún*
 tia=ku_i mu-a-vua kasua_j [’apa-kũũũ _i/_{*j}]COMP
 FUT=1SG AV-IPFV-give 2SG.OBL CAU-eat
 ‘I_i will give (some food) to you_j [_i/_{*j} to make (you) eat].’ (Elicited)

As suggested earlier, the PSA can also serve as an obligatory controller in control constructions. Another example can be seen in (13a), where the PSA is realized as a lexical noun phrase *kana’uá=maku* ‘my brother’. Control is also a property shared by the non-PSA agent in non-perfective clauses, although it occurs in the genitive case when realized as a pronoun. This can be seen in (13b), which involves the third-person genitive pronoun *ké* realizing the non-PSA agent.

(13) Control: a property shared by the PSA and the non-PSA agent

- a. *mucán=cu ha masi- – kana’uá=maku, móca taná tumatútulu*
 mu-caanũ=cu sua kana’ua=maku_i [mu-aca tanasa _i t<um>a-tutulu
 AV-road=COS CTRV brother=1SG.GEN AV-walk house <AV>Ca-tell
cáu.
 cau]COMP
 person
 ‘My brother_i left [_i to walk home and tell people].’ (1009-MKN:269)
- b. *niála ké talísi, umúmũn na unco, takilinga.*
 ni-ala ke_i talisi [um-umũũũ _i na takilinga]COMP
 PV.PRF-take 3GEN rope AV-tie LOC utensil.container
 ‘He_i took the rope [_i to tie (it) onto the utensil container.’ (1016-AKN:234-236)

In this regard, at least two types of grammatical relations can be identified in the Kanakanavu verbal clause based on case-marking and other syntactic properties, as summarized in Table 9. The PSA is the most well-defined: it is consistently case-marked in the pronominal domain, represents the only participant of the clause that can be relativized on, and may control an omitted agent in a complement clause. The agent in patient-voice clauses is a non-PSA participant that nonetheless can serve to control an omitted complement-clause agent. It is, however, case-marked differently when occurring as a pronoun depending on the tense-aspect value of the clause: oblique in the perfective but genitive in non-perfectives. Finally, other non-PSA participants lack any of the syntactic properties described previously, so whether they represent an identifiable type of grammatical relation in Kanakanavu requires further investigation.²⁶ They are non-

²⁶ The fact that these non-PSA participants lack any of the above-mentioned syntactic properties suggests that they may be non-core arguments. An analysis that adopts this would leave the PSA as the only core argument left in Kanakanavu agent-

Table 9: Participant types and morphosyntactic properties

Participant type	(Pronominal) case	Relativization ²⁷	Control
PSA	unmarked	yes	yes
Non-PSA agent	oblique (perfective)	no	yes
	genitive (non-perfective)	no	yes
Other non-PSAs	oblique	no	no

PSA in the sense that they cannot be relativized on; they are also crucially differentiated from the non-PSA agent in that they do not control omitted agents in complement clauses.

Two interesting mismatches are therefore identified between case-marking and behavioral properties of participant types in Kananavu. On the one hand, both the perfective non-PSA agent and other non-PSA participants are marked in the oblique when realized as pronouns; however, only the former can serve as the obligatory controller. On the other hand, although the pronominal non-PSA agent is case-marked differently depending on verbal tense-aspect marking, control is a property that is unanimously shared whether it is the oblique/perfective agent or the genitive/non-perfective agent that is involved.

4 Differential agent marking and lexical effects on agent interpretation

As demonstrated in the previous section, the non-PSA agent in Kananavu forms a well-defined grammatical/argument role, but it involves a choice of (oblique vs genitive) pronominal case-marking that is conditioned by the tense-aspect value of the clause (reflected in verbal voice marking). In this regard, Kananavu can be characterized as a language exhibiting **differential agent marking** – a type of differential case marking specifically targeting the agent argument (Bossong 1985, Fauconnier 2011, Malchukov 2017, Witzlack-Makarevich and Seržant 2018).

Differential agent marking is commonly conditioned by morphosyntactic features that are external to the agent itself. Kananavu happens to instantiate a type in which tense-aspect serves as a conditioning factor.²⁸ An example of tense-aspect conditioned agent case marking can be seen in Georgian, where the agent argument of transitive verbs is marked in two alternating cases – ergative and dative. The former is found in the aorist or optative, while the latter is found in the inferential perfect and counterfactual pluperfect. Below, the former is exemplified with a verb in the aorist (14a) and the latter with a verb in the inferential perfect (14b):

(14) Georgian (Harris 1981, 1, cited from Arkadiev 2017, 751)

- a. *glex-ma da-tes-a simind-i*
 peasant-ERG PVB-SOW-AOR.3SG.SBJ CORN-NOM
 ‘The peasant sowed corn.’

voice clauses, which would then be considered syntactically intransitive (see Ross 2002, Aldridge 2004, Liao 2004 for similar analyses of other Austronesian languages). Since the focus of this paper is on lexical effects, however, no explicit argument regarding a syntactic-transitivity analysis of these participants will be provided. A full-fledged syntactic analysis would depend on how other types of evidence are taken into consideration, which is beyond the scope of the article.

²⁷ As indicated in Section 3.1, only the PSA may be relativized on. All instances of relativization in the author’s natural-discourse data involve the relativized nominal serving as the PSA of the clause. For space consideration, no further discussion is provided here regarding the non-relativizability of non-PSA participants.

²⁸ Other conditioning factors that have been discussed in the literature include (i) person combination across the agent and patient, (ii) saliency of the agent and/or patient, and (iii) polarity of the clause (cf. Malchukov and de Swart 2008, Arkadiev 2017).

- b. *glex-s* *da-u-tesav-s* *simind-i*
 peasant-DAT PVB-3SG.IO-SOW.PRF-3SG.SBJ corn-NOM
 ‘The peasant has (apparently) sown corn.’

Under the western Austronesian context, differential marking tied to the non-PSA agent has not been widely reported. There is, however, at least one Formosan language that has been described as exhibiting agent case alternation, which is conditioned by a specific referential property – definiteness – of the agent. In Katipul Puyuma, the non-PSA agent is invariably cross-referenced by a proclitic attached to the clause-initial verb. However, definiteness may affect the case marker chosen for marking the nominal that realizes the agent participant itself.²⁹ When the agent is realized as a definite lexical noun phrase (such as *lalak* ‘the children’ in 15a), it may be marked by either the nominative case marker *na* or the genitive case marker *nina*. When it is realized as an indefinite lexical noun phrase (such as *unan* ‘a snake’ in 15b), however, the oblique case marker *za* is used.

(15) Katipul Puyuma (based on Teng 2009, 832)

- a. *tu=paing-ay=ta* *na/nina* *lalak*
 3.GEN=sneeze-UV=1P.NOM DF.NOM/DF.GEN children
 ‘The children sneezed to us.’
- b. *tu=karatr-aw* *za* *unan*
 3.GEN=bite=UV ID.OBL snake
 ‘He was bitten by a snake.’

Although more data are still required to determine the nature of the Katipul Puyuma parallel, there are at least two fundamental differences from what is shown above for Kananavu, in addition to the differences in conditioning factors – tense-aspect in Kananavu vs definiteness in Katipul Puyuma. First, the differential case marking in Kananavu is only seen in the pronominal domain. Based on the data provided by Teng (2009), however, the Katipul Puyuma phenomenon appears to be found in the lexical domain. Furthermore, the differential agent marking in Kananavu interacts closely with verbal tense-aspect marking. In comparison, in Katipul Puyuma, agent case marking does not appear to interact with verbal morphology.

The discussion that follows in this section explores a less touched-on issue in differential agent marking – lexical effects on the differentially case-marked agent. In the previous section, the non-PSA agent in Kananavu is demonstrated to be syntactically equivalent: regardless of tense-aspect conditioned pronominal case marking, the non-PSA agent can serve as the obligatory controller in complex clause constructions. However, although the oblique-genitive case-marking alternation has a basis in tense-aspect, the two differentially case-marked types of agent further differ in how they are interpreted, which is independent of tense-aspect. Importantly, there are strong lexical effects at play. In Section 4.1, agent interpretation is examined in a very specific discourse context: when it is left unexpressed in the use of **dynamic verbs**. As shown below, unexpressed non-PSA agents are interpreted as having generic reference and/or backgrounded status in non-perfectives, but they are interpreted as coreferential with a topical discourse referent in the perfective. In Section 4.2, agent interpretation is examined when **stative verbs** are used. Here, rather different patterns of agent interpretation arise. Depending on the specific stative verb involved, the non-PSA agent may or may not be obligatorily interpreted as a prototypical semantic agent in the perfective, and there may be further implications for how the stative situation is (re-)construed.

²⁹ I am indebted to one of the anonymous reviewers for pointing this out for me.

4.1 Dynamic verbs and referential prominence of the agent

The two types of non-PSA agent exhibit one crucial difference when dynamic verbs are involved, which is concerned with how they are referentially interpreted when left unexpressed. This is a property that is rather elusive when only elicited data are considered, but can be shed light on by data from spontaneous speech.

To begin with, non-perfective patient-voice verbs are commonly observed to be used in discourse with the non-PSA agent omitted from mentioning. In this case, the omitted non-PSA agent is generally interpreted as having generic reference. In (16a), for example, the imperfective patient-voice verb *alémin* /alooim-in/ ‘forget’ is used to indicate that the PSA – *tapcaláke* ‘the Tapcalake people’ – shall not be forgotten, not by a specific agent (semantic experiencer), but by everyone. Notice here that no explicit (pro)nominal expression is present to indicate the (generic) semantic experiencer. Another example can be seen in (16b), where the perfect patient-voice verb *nelupáca* /ni-ulupaca/ ‘use’ is again only accompanied by the semantic patient – *váva kalávung* – with the generic/unimportant agent backgrounded and omitted from mentioning.³⁰ In both cases, the agent, if present and pronominal, is expected to occur in the genitive case.

(16) Non-perfective verbs used with (genitive) agent omitted from mentioning

- a. *'án, alémin, matanganái sua unco, eh., tapcaláke si,*
ka'anə alooim-un mata-nganai sua tapucalake si
 NEG forget-PV.IPFV become-name CTRV Tapcalake.people because
 ‘The Tapcalake people will not be forgotten in the naming ritual (of the Mikong Festival), because.’ (1036-AKN:624-628)
- b. *múntásu kán sua unco, sua unco vúlu si, nelupáca váva*
m-untasə kani sua sua vulu si ni-ulupaca vava
 AV-powerful EVI CTRV arrow because PV.PRF-USE bone
kalávung.
kalavung
bull
 ‘The arrows were powerful because the bull’s bones were used.’ (1016-AKN:353-357)

Perfective patient-voice verbs, on the other hand, are almost always used with an overt agent in discourse. When left unexpressed, which very rarely occurs in discourse but can be exemplified in (17), the agent is always understood as a “zero” participant, representing a tracked, topical referent that has been mentioned in prior discourse. The zero agent is represented in the data below with an empty-set symbol to signify that despite being unexpressed, it is still centrally involved in the interpretation of the perfective patient-voice verb.³¹ Thus, a major distinction between the non-perfective and perfective patient-voice verbs concerns whether leaving the non-PSA agent unexpressed implies a backgrounded interpretation. Whereas this is the case for non-perfective verbs, as seen in (16), perfective patient-voice verbs are always interpreted as involving the agent as a referentially prominent participant.

³⁰ In a way, these usages can be considered “passive-like,” as they are functionally analogous to passive constructions in which the event is presented as oriented toward the patient only (Sansò 2006). Note, however, that these usages should not be analyzed as instantiating a grammatical passive construction. Importantly, no syntactic operations are involved to give rise to the passive-like usage, and no evidence exists to show that the non-PSA agent is syntactically demoted as well. It should also be noted that a true passive construction would be typologically unusual under the Formosan and Philippine context, where antipassive(-like) constructions are much more commonly observed (Chen and McDonnell 2019).

³¹ The zero agent is represented by the first empty-set symbol. The second represents the PSA, which is also regularly realized as zeroes in discourse, which will be discussed in the next paragraph. According to Accessibility Theory (cf. Ariel 2001), topical referents are highly accessible discourse entities and are more likely to be marked by high accessibility markers, with “zero” ranking highest on the accessibility marking scale.

- (17) Perfective verbs used with topical agents that are realized as a ‘zero’ argument in discourse

alivalé=cu , *u'u. misé.*
alivali-ai=cu $\emptyset_i \emptyset_j$ *u'u mise*
 reply-PV.PFV=COS yes QUOT
 ‘(I_i) replied (to him_j), saying “Okay!”’ (1029-MKN:274-276)

Interestingly, the “zero” behavior of oblique agents is also exhibited by the PSA. In addition to representing a syntactically prominent/privileged participant, the PSA often assumes topical discourse status as well, being continuously tracked by the speaker in discourse. An example of zero PSA occurring together with a zero non-PSA agent has been shown in (17). Two more examples of zero PSA can be seen in (18). Here, the unexpressed semantic agent ‘they’ in (18a) and the semantic patient ‘him’ in (18b) represent tracked referents already mentioned in prior discourse:

- (18) Topical PSA realized as zero in discourse

a. *'e=kán* *po'ocípi* *vutúkulu*
'esi=kani *po'ocipi* *vutukulu* \emptyset_i
 PROG=EVI cook fish
 ‘(They_i) were cooking fish. (1009-MKN:120) ‘Zero’ PSA in agent voice

b. *tia* *paná'un* *ké.*
tia *pana'-un* *ke* \emptyset_j
 FUT shoot-PV.IPFV 3.GEN
 ‘He_j was going to shoot (him_j).’ (1009-MKN:188) ‘Zero’ PSA in patient voice

On the other hand, the backgrounded status of the non-perfective non-PSA agent is shared by other non-PSA participants, which are also often left unexpressed when not saliently involved in event interpretation. This can be exemplified by the semantic patient (cooked food/ingredient) that is implied in the meaning of the agent-voice verb *po'ocípi* ‘cook’, but is not explicitly expressed due to its generic/backgrounded status in (19a). Here, it is the general event of *cooking* that is of interest to the speaker.³² This is in contrast with the example in (19b), where the same event is presented as involving a specific patient. In the latter case, the verb occurs in the patient-voice construction, and the specific patient is realized as a zero PSA of the clause.

- (19) Patient occurring as omitted oblique in agent voice and as zero PSA in patient voice

a. *pô'ocípi=cu* *sua* *nánnakũ.* *tanása.*
po'ocipi=cu *sua* *na-nanakũ* *tanasa*
 cook=COS CTRV RED-woman house
 ‘The women staying indoors are now about to cook.’ (1010-PKP:55-56)

b. *pô'ocípin=cu.*
po'ocip-in=cu \emptyset_i
 COOK-PV.IPFV=COS
 ‘(It/the fish_i) will then be cooked.’ (1010-PKP:158)

A detailed investigation of the behaviors of the grammatical relations in discourse, therefore, reveals that the two differentially marked non-PSA agents are indeed functionally different in terms of how they are interpreted when left unexpressed. Whereas the non-perfective agent (genitive-marked when pronominal)

³² The event is interpreted as “cooking” in general, instead of an instance of the cooking event involving a specific patient being cooked. Recall (from discussion in Section 3.2) that since the verb here occurs in the agent-voice construction, the semantic agent (the women) would serve as the PSA and the semantic patient, if present and pronominal, would occur in the *oblique* case.

Table 10: Participant types and their morphosyntactic and discourse properties (in the usage of dynamic verbs)

Participant type	(Pronominal) case	Relativization	Control	Zero interpretation
PSA	unmarked case	yes	yes	yes
Non-PSA agent	oblique (perfective)	no	yes	yes
	genitive (non-perfective)	no	yes	no
Other non-PSAs	oblique	no	no	no

Table 11: Indicative patient-voice verbs and tense-aspect alternations

Perfective	Imperfective	Perfect	Gloss
amanúnge /a-manung-ai/	amanúngun /a-manung-un/	—	feel good
alakuláce /ala-kulac-ai/	alakulácun /alakulac-un/	—	angry
tavalá'e /taavala'-ai/	tavalú'un /taavala'-un/	—	know
kúne /kunen-ai/	kúnun /kunen-un/	nikún /ni-kunen/	eat
cú'úle /cú'ul-ai/	cú'ulún /cú'ula-un/	cinú'ula /c<in>ú'ula/	see
alái /ala-ai/	alún /ala-un/	niála /ni-ala/	take

allows a generic/backgrounded interpretation when omitted from mentioning, the perfective agent (oblique-marked when pronominal) is always interpreted as a topical, continuously tracked zero referent when left unexpressed in discourse. In this regard, the two types of non-PSA agents can be further analyzed as aligning differently with other participant types. The perfective non-PSA agent aligns more with the PSA, the most syntactically privileged argument in the verbal clause, as both are interpretable as zero/tracked referents in discourse. On the other hand, the non-perfective agent aligns more with other non-PSA participants because of its ability to be omitted from mentioning due to backgrounded status in discourse (Table 10).

4.2 Stative verbs and the semantic interpretation of the agent

The natural discourse data examined in the previous section show that despite being syntactically equivalent in control properties, the two types of non-PSA agents (differentially case-marked when occurring as a pronoun) show very different behaviors when left unexpressed in discourse. The data investigated previously, however, are all based on the usage of dynamic verbs, which are found to frequently show tense-aspect alternations in natural, spontaneous speech. Stative verbs, on the other hand, are not as frequent in discourse. However, elicited examples indicate that they behave very differently from dynamic verbs in terms of what effects the perfective/non-perfective alternation may have on the interpretation of the non-PSA agent.

As suggested in Table 6, repeated in Table 11 for ease of reference (with the verbs slightly rearranged), patient-voice verbs with stative semantics in Kakanavu converge in one important morphological property: they tend to lack a perfect form. The first three patient-voice verbs shown below are characterizable as having rather stative meanings, and they all lack perfect forms. This is in sharp contrast to the other three patient-voice verbs that follow, which have rather dynamic meanings. The latter consistently show a three-way tense-aspect distinction.

Different from what is observed for dynamic verbs, omitting the agent in stative verbs has more implications for how the verb itself is interpreted. This can be exemplified by two patient-voice verbs that encode emotional/psychological states. The imperfective forms of the verbs – *alakulácun* '(be) angry (patient voice imperfective)' and *kacangcangálun* '(be) happy (patient voice imperfective)' – are shown in (20). Here, the genitive pronouns realizing the non-PSA agent represent the semantic experiencers involved

in the stative situation. On the other hand, there are also semantic stimuli involved; they are designated as the PSA and are realized as lexical noun phrases in the examples below.

(20) Examples of two patient-voice stative verbs (in the imperfective)

- a. *alakulácun=áku* *cáu* *ísua*.
 ala-kulac-*un*=maku cau isua
 become-angry-PV.IPFV=1SG.GEN person DEM.DIST
 ‘I am angry at that person.’ (Elicited)
- b. *kacangcangálun=áku* *cáu* *ísua*.
 ka-cangcangal-*un*=maku cau isua
 STAT-happy-PV.IPFV=1SG.GEN person DEM.DIST
 ‘I am happy with that person.’ (Elicited)

When the genitive pronouns are omitted, as in (21), interestingly, completely different interpretations of the verbs result: *alakulácun* ‘(be) infuriating’ and *kacangcangálun* ‘(be) pleasant’.

(21) Examples of two patient-voice stative verbs (in the imperfective) with omitted agent

- a. *alakulácun* *cáu* *ísua*.
 ala-kulac-*un* cau isua
 become-angry-PV.IPFV person DEM.DIST
 ‘That person is infuriating.’ (Elicited)
- b. *kacangcangálun* *cáu* *ísua*.
 ka-cangcangal-*un* cau isua
 STAT-happy-PV.IPFV person DEM.DIST
 ‘That person is pleasant.’ (Elicited)

Omitting the agent in the usage of the imperfective stative verbs can be argued to result in completely different situations expressed by the same verbs. First, the two interpretations – one with overt agent and the other without – are concerned with predication directed toward different participants. The overt-agent interpretation (20) indicates an emotional/psychological state that is present in the semantic experiencer (i.e., ‘(be) angry’ and ‘(be) happy’), whereas the omitted-agent interpretation (21) presents a property that characterizes a semantic theme (i.e., ‘(be) infuriating’ and ‘(be) pleasant’). Second, the former concerns a transitory state that the agent is presented as experiencing, while the latter presents a state that is rather long lasting or a stative property exhibited by the theme participant.³³ The semantic differences can even be argued to result in completely different lexemes. An example list of stative verbs that illustrate the overt-agent/omitted-agent based alternation is given in Table 12.³⁴ Again, this is drastically different from what is observed for dynamic verbs, where leaving the agent unexpressed in the imperfective implies that the same event is concerned, but with a generic/non-specific agent involved.

A comparable effect is also found when the same stative patient-voice verbs undergo alternation to occur in their perfective forms. Consider again the verb *alakulácun*, which has a stative interpretation ‘(be) angry’ in the imperfective, as in (20a), repeated in (22a) for ease of reference. When the verb occurs in the perfective (*alakuláce*), interestingly, an obligatory dynamic interpretation results, leading to the meaning ‘scold’, as in (22b).

³³ In other words, although no morphological alternations are involved, the overt-agent usage of these stative verbs can be argued to serve as a *stage-level predicate*, and the omitted-agent usage, an *individual-level predicate* (Krazter 1995).

³⁴ The prefix *ka-* is a marker of stativity which has a rather wide distribution across Formosan languages. In Kanakanavu, *ka-* occurs in many stative verbs in their patient-voice forms; in agent voice, *ka-* is realized as *ma-*. See, for example, Zeitoun and Huang (2000) and Ross (2015) for the *ka-~ma-* alternation, which may be conditioned by other factors (such as mood) in different Formosan languages.

Table 12: Imperfective patient-voice stative verbs with different interpretations conditioned by the presence/absence of agent

Verb	Overt-agent interpretation	Omitted-agent interpretation
alakulácun /ala-kulac- un /	‘(be) angry (with)’	‘infuriating’
kacangcangálun /ka-cangcangal- un /	‘(be) happy (with)’	‘pleasant’
ka’icúpun /ka-’icup- un /	‘(be) afraid (of)’	‘scary’
kalú’un /ka-lu’- un /	‘love, cherish’	‘lovable’
ka’anmánun /ka-’anman- un /	‘like, desire’	‘likable’

(22) Patient-voice stative verbs occurring in the imperfective and the perfective

- a. *alakulácun=áku* *cáu* *ísua*.
 ala-kulac-**un**=maku cau isua
 become-angry-PV.IPFV=1SG.GEN person DEM.DIST
 ‘I am angry at that person.’ (Elicited)
- b. *alakuláce* *’ikúa* *cáu* *ísua*.
 ala-kulac-ai ’ikua cau isua
 become-angry-PV.PFV 1SG.OBL person DEM.DIST
 ‘I scolded that person.’ (Elicited)

In this case, the semantic difference can be considered even more drastic than what is found for that between the overt-agent and omitted-agent usages of the imperfective patient-voice verbs discussed earlier. Here, the perfective now encodes a dynamic event instead of a stative situation, and the semantic experiencer that is represented by the genitive-marked pronominal agent in the imperfective corresponds to the (oblique-marked) volitional instigator (i.e., a prototypical semantic agent) in the perfective. The two interpretations also crucially differ in telicity: the stative interpretation (in the imperfective form) represents an atelic situation, whereas the dynamic interpretation (in the perfective form) represents a telic one.

Importantly, there is considerable lexical idiosyncrasy in what type of reinterpretation results in the imperfective/perfective alternation. A similar case can be seen in (23), where the perfective patient-voice verb – *amanúnge* ‘treat well’ indicates a dynamic event performed by a volitional agent (23b). The event expressed in the perfective verb form can be considered to be motivated by the psychological state indicated by its imperfective counterpart – *amanúngun* ‘(be) happy/pleased’ (23a):

(23) Perfective/imperfective alternation and dynamic (re)interpretation of patient-voice stative verb

- a. *amanúngun=áku* *cáu* *ísua*.
 a-manung-**un**=maku cau isua
 STAT-good-PV.IPFV=1SG.GEN person DEM.DIST
 ‘I am happy/pleased with the person.’ (Elicited)
- b. *amanúnge* *’ikúa* *cáu* *ísua*.
 a-manung-**ai** ’ikua cau isua
 STAT-good-PV.PFV 1SG.OBL person DEM.DIST
 ‘I treated that person well (because I was happy/pleased with them).’ (Elicited)

Sometimes, however, the perfective verb form introduces an inchoative interpretation instead, indicating a change of state caused by entrance into an emotional/psychological state by the experiencer.³⁵ This can be seen in (24), where the perfective verb form *kacangcangále* is interpreted as ‘get/become happy’ (24b),

³⁵ It has been documented in the literature that a change-of-state interpretation (similar to the inchoative reading here) may arise when the perfective aspect is forced on a stative predicate (cf. Timberlake 2007, 293).

Table 13: Imperfective and perfective interpretations of patient-voice stative verbs

Verb (IPFV~PFV)	IPFV interpretation	PFV interpretation
amanúngun ~ amanúnge	pleased with	treat well
alakulácun ~ alakuláce	angry with	scold
kacangcangálun ~ kacangcangále	happy with	become happy with
tavalú'un ~ tavalá'e	know	begin to know

whereas its imperfective counterpart *kacangcangálun* does not imply any indication of entrance into the expressed state (24a).

(24) Perfective/imperfective alternation and inchoative (re)interpretation of patient-voice stative verb

- a. *kacangcangálun=áku cáu ísua.*
 ka-cangcangal-**un**=maku cau isua
 STAT-happy-PV.IPFV=1SG.GEN person DEM.DIST
 'I am happy with that person.' (Elicited)
- b. *kacangcangále 'íkua cáu ísua.*
 ka-cangcangal-**ai** 'ikua cau isua
 STAT-happy-PV.PFV 1SG.OBL person DEM.DIST
 'I got/became happy with that person.' (Elicited)

Notice that the type of semantic reinterpretation resulting from the perfective/imperfective alternation is arguably lexically idiosyncratic. Although *kacangcangálun* '(feel) happy (with)' can be considered semantically similar to *amanúngun* '(feel) good (about)', the reinterpretations led to by their perfective forms are very different. A list of patient-voice stative verbs and their imperfective and perfective interpretations is given in Table 13.

Evidenced from the alternations undergone by both dynamic and stative patient-voice verbs, it can be concluded that interpretation of the non-PSA agent not only interacts with referential status in discourse but is also interconnected with (stative) verb semantics, which can result from either the omission of the agent or alternation between the perfective and imperfective forms of the verb. It is important to recall, nevertheless, that syntactic evidence (as discussed in Section 3.2) still suggests the two types of differently marked non-PSA agents are equivalent in the grammatical sense: they are both the grammatical relation that represents the agent in patient-voice clauses, and they both serve as the obligatory controller in clause combining. At any rate, the findings presented in this section show that agent marking and agent interpretation interact closely with verb semantics, where lexical effects are especially strong when stative verbs are considered.

5 Conclusion

Kanakanavu, a language with a western Austronesian voice system, exhibits two special foci of lexical effects that play major roles in its verbal-clause morphosyntax. The first is discussed in Section 2: lexical effects are found to concern whether voice alternation is possible, where (semantic) transitivity emerges as an important factor. Although the two voice constructions – agent voice and patient voice – are both grammatically possible for packaging events in the Kananavu verbal clause, verbs that can be characterized as semantically intransitive (i.e., involving only one participant in the semantics) may be subject to restrictions on voice alternation: they may not occur in the patient-voice construction. For verbs that are semantically intransitive but can still occur in the patient-voice construction, there are both semantic and syntactic implications. Semantically speaking, occurring in the patient-voice construction allows for a transitive construal of the packaged event (e.g., the meaning 'approach' in the patient-voice verb *ukúse* vs simply 'go (towards)' in its agent-voice counterpart *mukúsa*); syntactically speaking, the ability to

undergo voice alternation also allows for either the agent or the patient to obtain PSA status, as discussed in Section 3.1. The lexical restrictions on voice alternation can be considered evidence for arguing that voice is derivational in Kanakanavu. This is in line with previous research on voice across many Austronesian languages, and it puts forward a caveat: although western Austronesian voice is often presented as a rather systematic grammatical phenomenon, prototypical examples often showcase the usage of dynamic verbs with rather transitive semantics. To obtain a more comprehensive picture of how voice systems function across western Austronesian languages, therefore, lexical effects must be taken into account, where verbs with intransitive semantics may show interesting variation regarding voice alternation.

By examining the non-PSA agent in Kanakanavu, this study also presents another caveat: lexical effects can still be at play even when a highly grammaticalized phenomenon is considered. As demonstrated in Section 3.2, tense-aspect marking is deeply rooted in the Kanakanavu verbal-clause morphosyntax. In the domain of patient voice, every verb exhibits a perfective/non-perfective distinction, which also conditions how the non-PSA agent is case-marked when occurring as a pronoun: it is marked in the oblique in the perfective, but in the genitive in non-perfectives. Syntactic evidence reveals that the two types of agents are syntactically equivalent at least regarding control. Regardless, there are two levels of lexical effects at play even though they are not concerned with whether a patient-voice verb may undergo (tense-aspect) alternations. On the one hand, further examination of the usage of dynamic verbs in natural discourse (Section 4.1) reveals that there is a difference in how the non-PSA agent is interpreted when left unexpressed. The perfective non-PSA agent (marked in the oblique when pronominal) aligns more with the PSA as both share the property of being interpretable as topical, continuously tracked referents when left unexpressed in discourse. In contrast, the non-perfective non-PSA agent (marked in the genitive when pronominal) aligns more with other non-PSA participants, as they are simply interpreted as an omitted participant due to backgrounded/unimportant status when not overtly expressed in discourse. The picture becomes very different when the non-PSA agent is examined with stative verbs: as demonstrated in Section 4.2, omission of the agent in the imperfective or alternation between the perfective and imperfective verb forms can have varying effects, which can result in drastic changes to the verb semantics. This article, therefore, shows that considering both discourse and elicited data may allow one to not only explore lexical restrictions on grammatical relations, but also investigate what lexical effects can be identified on the interpretation of the grammatical relations per se as well.

The Kanakanavu data presented in this study characterize the language as typologically unique under the western Austronesian context. In addition to exhibiting a binary, instead of a four-way, Philippine-type voice distinction common across Taiwan and the Philippines, Kanakanavu is also unusual in involving an agentive participant (i.e., the non-PSA agent) that is subject to differential marking. It should be, for example, crucially distinguished from Tagalog, which is a language that also exhibits differential case marking, but it is generally the patientive participants that are concerned.³⁶ In Tagalog, patients may alternate between serving as the PSA or a non-PSA participant or be marked by different non-PSA case markers (e.g., Latrouite 2011).³⁷ As discussed in Section 4, differential marking that targets the non-PSA agent is attested in at least one other Formosan language – Katipul Puyuma. However, the Puyuma

³⁶ I am grateful to one of the anonymous reviewers for pointing out the relevant phenomenon in Tagalog.

³⁷ The fact that semantically transitive verbs may undergo voice alternation in Kanakanavu also suggests the language can be analyzed as showing differential marking of patientive participants as well: patientive participants serve as the PSA in patient voice, but occur as non-PSAs in agent voice (which are oblique marked if pronominal). Viewed in this way, then, both agentive and patientive participants may be differentially marked in Kanakanavu. The former are interconnected with tense-aspect marking within patient voice, whereas the latter are concerned with alternation between agent voice and patient voice. As pointed out by one of the anonymous reviewers, differential agent marking in Kanakanavu can be considered a case of differential “object” marking, since it concerns a “non-subject” argument; however, crosslinguistically speaking, differential object marking often involves patientive, instead of agentive, participants. Although this article has avoided using the term “subject” to refer to the PSA in Kanakanavu, it would be interesting to explore beyond this article how Kanakanavu fits into a detailed grammatical typology of differential argument marking, especially regarding how (un)common non-subject agents are attested to be subject to differential marking.

phenomenon (based on the description in Teng 2009, 832) is distinct from that in Kananavu in formal and functional respects. It would, therefore, be imperative to further delve into other Austronesian languages to determine how unique the Kananavu phenomenon is, since tense-aspect conditioned agent marking is indeed attested outside of the Austronesian language family (see, for example, Arkadiev 2017).

A remaining puzzle presented by the Kananavu data concerns a curious functional split exhibited by the oblique pronouns. In the usage of dynamic verbs, the oblique pronouns appear to align with the PSA when representing non-PSA agents, as both are interpreted as zero referents when left unmentioned. When representing other non-PSA participants, which assume non-agent roles, however, the oblique pronouns align instead with the non-PSA agent that occurs in the genitive case when pronominal: both are interpreted as participants not centrally involved in the event being expressed. The oblique pronouns, therefore, can be characterized as having rather prominent status when representing agents, but rather peripheral status when representing non-agent participants. A fruitful path of investigation into this interesting functional split in the oblique case may be taken first by examining the distribution of the oblique and genitive pronouns both language-internally (across different clause types in Kananavu), and comparatively (across other Formosan and Philippine languages). This is beyond the scope of this article, hence left for future research endeavors.

Abbreviations³⁸

AOR	aorist
AV	agent voice
<i>Ca</i>	<i>Ca</i> -reduplication
COMP	complement clause
COS	change of state
CTRV	contrastive marker
CV	circumstantial voice
DF	definite
EVI	evidential
EXIST	existential
ID	indefinite
IO	indirect object
LV	locative voice
PSA	Privileged Syntactic Argument
PV	patient voice
PVB	preverb
RC	relative clause
RED	reduplication
UV	undergoer voice

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³⁸ The list includes glosses that are not covered in the Leipzig Glossing Rules.

have been helpful in not only guiding me to attend to the finest details of my analysis, but also framing my findings in meaningful and sensible ways. I am solely responsible for all the remaining errors in this article.

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