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Identifying agents of change: Simplification of possessive marking in Abui-Malay bilinguals

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This paper investigates variation in possessive marking in Abui, a language spoken in a minority bilingual community in eastern Indonesia. Abui youngsters grow up acquiring both Abui (Papuan) and Alor Malay (Austronesian), but only become active speakers of Abui when they reach adolescence. Due to this delay, their Abui is expected to show signs of both imperfect acquisition and contact-induced effects. This language background makes them an interesting population on which to carry out a cross-sectional study on contact-induced variation. Abui distinguishes between a reflexive and non-reflexive possessive marker, while Alor Malay makes no such distinction. Combining methods from descriptive linguistics, bilingualism research, and variationist sociolinguistics, and using both a production and a comprehension task, we study the variation between four age-groups of Abui-Malay bilinguals: (pre-)adolescents, young adults, adults, and elders. Our results reveal that (pre-)adolescent males are the drivers of variation, and generalize the non-reflexive possessive marker to reflexive environments. This suggests that over the next decades the reflexive possessive prefix may be lost in Abui. This paper is a direct answer to a call by Ross (2013) to conduct in-depth variationist studies to establish more synchronically informed approaches to the study of language contact. In addition, by combining production and comprehension studies and applying them to an indigenous minority language, it expands the empirical support for a prominent hypothesis of bilingual processing: the Missing Surface Inflection Hypothesis (Prévost & White 2000b).

Keywords: Language contact; language variation and change; Papuan; Austronesian; Possession; inflectional simplification

1 Introduction

This paper investigates contact-induced variation in the use of possessive markers in Abui, a Papuan language spoken in the central part of Alor island, located on the Alor archipelago in eastern Indonesia (Kratochvíl 2007), see Figure 1. Abui is a member of the Timor-Alor-Pantar (TAP) family, which consists of ~25 languages spoken on the islands of Timor, Alor and Pantar and their neighbouring islets.¹

Most of the 17,000 Abui speakers on Alor are bilingual in Alor Malay and often also in Indonesian; most speakers consider Alor Malay as a local colloquial variety of Indonesian. Alor Malay (henceforth Malay) is the lingua franca used with speakers of other local vernaculars on Alor (Baird, Klamer & Kratochvíl in prep.). Abui speakers are exposed to Malay in school and at home, as their parents consider it as a language of opportunity.

¹ The TAP family is an outlier Papuan group that is located around 1000 kilometers west of the New Guinea mainland (Holton & Klamer 2017). The term Papuan is used here as a cover term for the hundreds of languages spoken in New Guinea and its vicinity that are not Austronesian (Ross 2005: 15), and is considered synonymous with non-Austronesian. The label Papuan says nothing about the genealogical ties between the languages. For an introduction with references to work on individual TAP languages, see Klamer (2017).

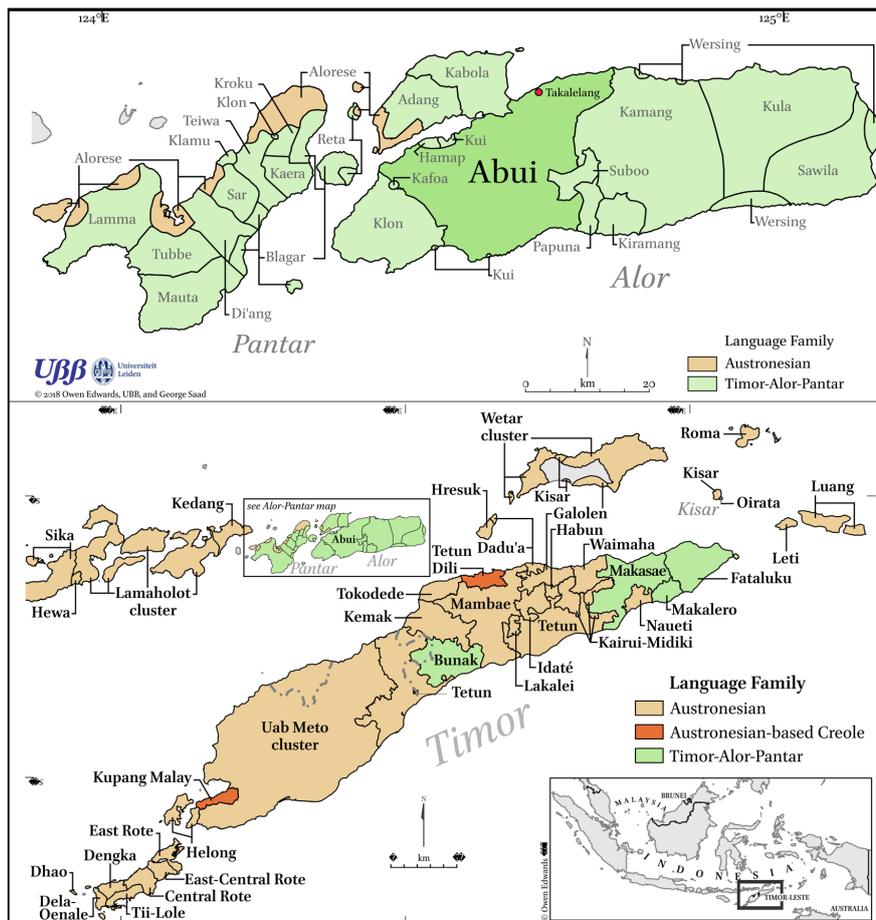


Figure 1: Map of Abui on the Alor archipelago.

The early exposure to Malay delays their acquisition of Abui, and many speakers display an acquisition path that is in between that of sequential and simultaneous bilinguals. Sequential bilinguals acquire Abui as a second language in childhood, while simultaneous bilinguals acquire Abui and Malay simultaneously from birth. One example of this hybrid acquisition path is what happens in the coastal village of Takalelang, where Abui youngsters grow up being exposed to both Abui and Malay, they acquire passive knowledge of Abui, but only become active speakers of Abui after adolescence and in early adulthood (see Section 2). In other words, their language use goes from being predominantly Malay with a receptive competence of Abui in childhood and adolescence, to a more balanced Malay-Abui in adulthood. In this respect, Abui bilinguals are different from other more widely studied bilinguals, such as speakers of minority languages involved in a prototypical form of language shift to a majority language (Grenoble 2011) or speakers of heritage languages (Montrul 2016). In contrast to the shift and the heritage scenarios, where reaching adulthood means predominantly speaking the majority language, in the Abui case, reaching adulthood means speaking both the majority language, Malay, and the minority language Abui. This dynamic language background makes the Abui an interesting population to carry out a cross-sectional study on contact-induced variation. We will see that the findings from this understudied contact-setting bear theoretical implications for models of contact-induced change (Kusters 2003; Trudgill 2011; Ross 2013) and contribute to the development of hypotheses from the generative paradigm usually applied to more prototypical bilinguals, such as the Missing Surface Inflection Hypothesis (Prévost & White 2000b).

Considering that most languages in small-scale communities, like the Abui, have only recently been investigated and lack historical records, linguists examine certain outcomes of contact and then attempt to reconstruct the processes that lead to these outcomes (Ross 2013). Ross attributes most contact-induced changes in Melanesia to either bilingually-induced change or shift-induced change, while also presenting a number of detailed methods to diagnose them. Bilingually-induced change is change which bilingual speakers introduce into one of their languages on the model of their other language (Ross 2013: 6). It typically leads to lexical calques (loan translations), grammatical calquing which copies grammatical forms but not their syntax, or syntactic restructuring, which copies both the grammatical forms and their syntax (Ross 2013: 27). Shift-induced change is change introduced by speakers who abandon the community language in favour of another language in their repertoire, the language to which they are shifting. Shift-induced changes mentioned in the literature include phonological transfer, constructional transfer, and simplified (morpho)syntax (Ross 2013: 30).² The Abui case presents a more complex scenario, because despite the fact that the community is characterized by bilingualism, the simplified morphosyntactic outcome of contact appears to be more similar to the result of a shift. This observation calls for a more nuanced characterization of the bilingual situation which is sometimes lacking in models of contact-induced change (Kusters 2003; Trudgill 2011; Ross 2013). In a similar vein, Muysken (2010) calls for a scenario approach in the study of language contact, which involves an elaboration of the sociolinguistic setting of the contact, as opposed to developing theories of contact by simply looking at the outcomes of contact, saying if language A and B come into contact, X happens (Muysken 2013).

One of the main rallying calls in Ross (2013) is to collect more variationist studies across age-groups, with a tight focus on the social setting and the relevant variables that might account for this variation. It seems unlikely that there has ever been a change that was not preceded by a period of variability in the norms (Meyerhoff 2000). Ross (2013) believes that investigating the language of pre-adolescents and adolescents will ultimately offer a window into incipient change. Therefore, age is to be considered a crucial factor for the variation that leads to change. The findings of our study confirm this observation, by showing that (pre-)adolescents are the leaders of linguistic change in the Abui community of Takalelang (cf. Foulkes & Vihman 2015).

In addition to age, gender has also been shown to be a crucial variable in explaining linguistic variation (Labov 1990: 205; Dubois & Horvath 1999: 304). Eckert & McConnell-Ginet (1999) point out that in order to make generalizations about language and gender, the social practices and relations of various gender groups in a given speech community must first be studied in detail. This seems particularly relevant for the study of variation in indigenous minority speech communities, as the social practices and relations in these communities are likely to differ from those of speech communities in western, urban, majority communities (Stanford & Preston 2009). For instance, in the rural parts of Indonesia especially, such as in the Abui community of Takalelang, young females have more territorially bounded networks, and they socialize more with the older generations. The present study shows that the language of (pre-)adolescent females is more conservative than that of their male counterparts, whose language shows a higher degree of simplification.

The linguistic feature under investigation here is possessive marking on nouns. Abui has a reflexivity distinction in its possessive system: a reflexive possessive prefix can only appear on the object and is referentially bound by the clausal subject (e.g. 'He_j hugs his_j child'). A non-reflexive possessive prefix can appear on both the object and the subject, and when it occurs on the object, has referents outside the clause (e.g. 'He_k hugs his_j

² For additional discussion, illustrations and references, we refer to Ross (2013).

child') (see Section 3). Malay, the dominant language locally, lacks this possessive reflexive distinction. Language contact studies suggest that the reflexivity distinction poses problems to L2 speakers whose L1 lacks such a distinction. For instance, Tingsell (2011), Fabricius-Hansen, Helland & Pitz (2017), and Helland (2017) show that German and French (languages that lack a reflexivity distinction) learners of Norwegian and Swedish (languages with the reflexivity distinction) fail to master the reflexivity distinction, and tend to overgeneralize the possessive form that is phonologically similar to those in their L1. Given that Malay lacks a reflexive distinction in the marking of possession, we expect to find simplification in the Abui possessive marking of, in particular, the younger Malay bilinguals, which is indeed what we find.

In order to test whether this simplification is indeed connected to age, we conducted a cross-sectional study using the *apparent time* construct (Labov 1963; Bailey et al. 1991), which is based on the assumption that synchronic differences between age-groups reflect diachronic language change. Following this line of argumentation, we take one synchronic sample which consists of four different age groups of Abui-Malay bilinguals: (pre-) adolescents (aged 9–16), young adults (aged 17–25), adults (aged 26–34), and elders (over 40). By combining production data and comprehension data, we tested their active and passive knowledge of the reflexive prefixes. We did so to test the predictions of a prominent hypothesis often proposed to explain the vulnerability of inflectional morphology in bilinguals, the Missing Surface Inflection Hypothesis (MSIH, Prévost & White 2000b). This hypothesis is usually applied to more prototypical bilinguals, especially to L2 learners. There has been an attempt, however, to test the predictions of the MSIH against other bilingual populations, such as heritage speakers (Montrul 2011).

The MSIH states that L2 learners have underlying knowledge of a given inflectional category or feature. However, in online production, they have trouble mapping the abstract feature to the morphological form (Lardiere 1998a; b; Lardiere 2000; Prévost & White 2000a; b). This means that L2 speakers still retain the knowledge; however, they may resort to a default form during oral production. Since it is not possible to test the reflexive possessive in a different grammatical environment (because it only manifests itself in one), a useful way of testing the MSIH is by comparing production and comprehension data. If the MSIH holds, then it follows that despite speakers performing badly in production, good performance in comprehension should be indicative that they retain knowledge of these inflectional categories. Note that the study of Montrul (2011) shows that the predictions of the MSIH do not apply to heritage speakers due to a task effect. Heritage speakers perform worse in comprehension than in production, because they are not familiar with written tasks tapping into metalinguistic knowledge.

The results show that both (pre-)adolescents and young adults have significant difficulty producing the reflexive possessive distinction, while only the (pre-)adolescents also have difficulty in comprehension. Overall, the speakers perform better in comprehension than in production. This indicates that, in general, they retain linguistic knowledge of the reflexivity distinction but have difficulties accessing or applying this knowledge during oral production. Using the *apparent time* construct, we suggest that the speech patterns of younger speakers will persist and become fully-fledged changes in the grammar of Abui over the next decades.

By comparing the use of possessive markers among four groups of Abui-Malay bilinguals, this study shows that the outcome of contact in a bilingual community can be simplification, and this has implications for the diagnostic criteria proposed in Ross (2013). This study also adds to the growing number of case studies zooming into synchronic language variation, and implements this approach to further our understanding of the processes and outcomes of language contact in indigenous multilingual communities generally, and in Eastern Indonesia in particular.

This paper is organized as follows: Section 2 provides the sociolinguistic background to the Abui speech community. Section 3 describes the expression of third person possession in both Abui and Malay. Section 4 describes the present study. Section 5 discusses and synthesizes the findings, while Section 6 presents the conclusions of the paper and points out directions for future research.

2 Sociolinguistic background

Over the last few decades, Abui speakers have become increasingly bilingual in Malay. In the late 1960s and early 1970s some of their original mountain dwellings, such as Takalelang, have been moved to the coast. There, the availability of better road connections, schooling opportunities, and religious institutions has contributed to increased contact with non-Abui speakers (Kratochvíl 2007). In the 1980s and 1990s, in a rigorous effort to align the Abui population with national educational standards, school teachers began imposing strict rules banning children from using Abui in the school environment. They also began instructing parents during community meetings and church sermons to raise their children exclusively in Malay/Indonesian in preparation for primary school. As a result, presently, most speakers over 40 (who were born before 1975), report having been raised exclusively in Abui. Speakers below the age of 40 report having been raised in Malay. Today, almost all Abui children are raised in Malay. Despite speaking predominantly Malay as children, most children acquire passive knowledge of Abui because adults use the language among themselves and occasionally also address their children in Abui. Most parents are certain that their children will learn Abui as young adults, so early instruction is not necessary. This is often backed up by the observation that, since Abui retains high prestige in the community among adults, even speakers affected by these developments come to learn and speak Abui as they grow older. This language history and language attitudes thus creates a dynamic language community consisting of *transitional bilingualism* (Grenoble & Whaley 2006). Every age group carries with it a slightly different balance of bilingualism, so bilingualism is better diagnosed based on age-group.

The tendency for children to grow up with a lingua franca and then shift to the local vernacular later in their lives has been reported for other areas of Indonesia (e.g. Nevins 1998; Bowden 2002) and Melanesia, such as Papua New Guinea and Vanuatu (Schokkin 2017: 94). In Abui, there appear to be gender differences in the amount of exposure to, and use of the lingua franca Malay, such that this scenario applies more to males than to females. Females report spending more time at home, carrying out domestic chores with their mothers, aunts, and grandmothers, while males are more likely to own motorbikes, travel to other parts of the island, and have more extensive social networks outside of the Abui community. They therefore have more exposure to Malay and speak it more often.

In the present study, we compare speaker groups that are demarcated by age and language history. We use Abui age-related categories, as presented in Table 1. The elderly speakers (those over 40) have a rather homogeneous language history (discussed below), and are considered as the Abui control group. The language history of the population below 40 is more heterogeneous, and is segmented into three age-groups. The age division uses emic categories that were constructed through in-depth interviews held with ten elder Abui speakers in 2017 about names for the important life-stages of individuals in Abui society: being a child, reaching sexual maturity, getting married, and having children, and the age by which individuals are commonly assumed to reach those stages.

In what follows, we describe each emic age category and present sociolinguistic data, charting the early linguistic exposure of these groups (see Tables 2–5). We consider the following variables to be indicative of the speaker's linguistic exposure to Abui and Malay:

- (i) language(s) spoken to as a child by parents before entering primary school,
- (ii) language(s) spoken to as a child by parents during primary school, and
- (iii) language(s) spoken with friends in the playground.

All participants attended at least a few years of primary school so language choices during primary school present a comparable period across groups. Comparing this usage to preschool exposure also allows us to observe shifts in language behavior.

The (pre-)adolescent group (9–16 years) is derived from the Abui term *moqu* ‘child’,⁴ a term to denote children and teenagers. The *moqu* period starts at late childhood, around the age of six, and lasts until late adolescence. The interviews reveal that the end of puberty at around 16 years marks the boundary of a *moqu*. In the past, a child would be given a loincloth to ritually mark the passage from *moqu* to sexual maturity (Du Bois 1944). Today, no such ritual exists anymore, but the concept of *moqu* is still widely used. For this study, the age of nine (not six) was selected as the lower boundary of *moqu*, because running the task to elicit Abui with children below nine proved to be difficult, as they did not feel comfortable speaking Abui or conducting the task. Today, all members of the (pre-) adolescents group of *moqu* are Malay-dominant bilinguals. They are addressed in Malay by their parents, and only use Malay with each other. The only times they report using Abui is when they converse with their grandparents. The great majority of (pre-)adolescent speakers (16 out of 19) report being addressed in Malay by their parents in their early childhood, before entering primary school, see Table 2. Six speakers, who report being addressed in Malay before entering primary school, report being addressed in both languages during primary school, indicating that parents adjusted their language patterns. All 19 participants report speaking exclusively Malay in the playground, see Table 2.

Table 1: Age-related categories in Abui.³

Groups	Age	Abui term	Brief description
(pre-)adolescents	9–16	<i>moqu</i> ‘child’	Still under the care of caregiver
young adults	17–25	<i>neeng abet</i> ‘young man’, <i>maayol maak</i> ‘young lady’	Beginning of adulthood; in search of partner
adults (Malay L1)	26–34	<i>kalieta</i> ‘adult/elder’	Typically married, have children, live in own house; be self-sufficient
elders (Abui L1)	40–75	<i>kalieta</i> ‘adult/elder’	Grew up speaking Abui; learned Malay at primary school

Table 2: Early language exposure of (pre-) adolescents (N = 19).

(Pre-)adolescents (age 9–16)	Malay	Both	Abui
Parents’ language use before primary school	16	2	1
Parents’ language use during primary school	10	8	1
Language use in primary school playground	19	0	0

³ The categories are based on the averaged impressions of ten Abui elders we interviewed. The age boundaries are based on the most common responses provided.

⁴ The Abui word *moqu* has the sense of ‘child, young person’. It cannot be used to refer to one’s offspring. For that, the word *wil* would be used (see example (6)), which has the sense of ‘child, offspring’.

The young adults group (17–25 years) consists of young, typically unmarried adults who are in search of a spouse. They are referred to using the Abui terms *neeng abet* ‘young man’ and *maayol maak* ‘young lady’. In the interviews, speakers considered the end of puberty to be around the age 16, so we took the age of 17 as the start of adulthood and the lower boundary of the young adult age group. The age of 25 was cited as being the age that a man or woman typically gets married, so that was taken as the upper boundary of this age group. Many young adult speakers who had been living away from the Abui home community for a certain period of time (e.g. for educational and career purposes), report having made conscious efforts to resettle into the community upon their return, and improving their Abui as they take on more important “adult” roles in the community. The young adults are also Malay-dominant bilinguals. Their early exposure as indicated in Table 3 resembles that of the (pre-) adolescents, although young adults have had slightly more exposure to Abui. For example, four young adults report being addressed equally in both languages, while two report mostly being addressed in Abui. Similarly to the (pre-) adolescents, we see an increase in exposure to Abui (besides Malay) when the young adults entered primary school.

The group of adults (26–34 years) consists of mostly married adults who have children. The Abui term for this age group is *kalieta* ‘adult(s) with child(ren)’. The interviews reveal that speakers over 25 are expected to be self-sufficient, have a good job, know how to work in the fields, and have a spouse. More than half of the members of this group (12 out of 19), are married and/or have one or more children. As *kalieta* ‘adults’, their social networks branch out to the older members of the community. In terms of language exposure, the adults group was the first to undergo a change in parental linguistic strategies: not all parents unequivocally raised them in Malay; they often mixed Abui and Malay. This is shown in Table 4, which presents a more balanced distribution compared to the two younger groups. Before and during primary school, a considerable number of speakers in this age group are raised either exclusively in Abui, or in both Abui and Malay. Similarly to the (pre-) adolescents and young adults, we see a rise in exposure to Abui as the speakers entered primary school. As regards the language used to communicate with friends in the playground, we see that half of the speakers reported using mostly Abui. This number is considerably higher than in the other two groups.

The elders group (range: 40–75 years) is the control group in this study. This group is the speaker group from which we assume that the patterns and rules of Abui grammar are derived (as reported in e.g. Kratochvil 2007), and which we take to represent the

Table 3: Early language exposure of ‘young adults’ (N = 19).

Young Adults (age 17–25)	Malay	Both	Abui
Parents’ language use before primary school	13	4	2
Parents’ language use during primary school	10	7	2
Language use in primary school playground	15	3	1

Table 4: Early language exposure of ‘adults’ (N = 19).

Adults (age 26–34)	Malay	Both	Abui
Parents’ language use before primary school	7	8	4
Parents’ language use during primary school	3	9	7
Language use in primary school playground	8	3	7

Table 5: Early language exposure of ‘elders’ (N = 11).

Elders (age 40–75)	Malay	Both	Abui
Parents’ language use before primary school	0	0	11
Parents’ language use during primary school	0	0	11
Language use in primary school playground	0	0	11

grammatical norm. The elders use Abui to communicate with other adults, and speak Malay only to children and non-Abui speakers. As shown in Table 5, all speakers over 40 grew up acquiring exclusively Abui, and were addressed in Abui by their parents before and during primary school. They typically only learned Malay in primary school from the age of seven onwards, and often dropped out school after a few years. The elders that did (partially) attend school all report using Abui in the playground. Most parents of the members of this group did not receive any formal education; however, some of their fathers received some Malay literacy training by foreign (Dutch) administrators, learning to write on stone tablets.

To sum up the key differences between the age-related categories of Abui speakers, all groups except the elders had more exposure to Malay than Abui in their pre-school early childhood years. They all had an increased exposure to Abui during primary school. The (pre-)adolescents had little early exposure to Abui and currently continue to have little exposure. Young adults had little early exposure to Abui but experience moderate current exposure. Adults had moderate early exposure to Abui and have moderate to high current exposure. The control group of elders had a high early exposure to Abui and has a high current exposure. They continue to use the language in everyday life, except when they speak to children and members of other ethnic groups.

3 The expression of possession in Abui and Malay

This section describes how nominal possession is marked in Abui (3.1) and Malay (3.2). The examples provided are from Saad (2015–2017), unless indicated otherwise.

3.1 Abui

A simple transitive clause in Abui has a subject and an object, and either one of these can be possessed or not. Example (1) has an unpossessed subject NP and an unpossessed object NP.⁵ A possessed subject NP is illustrated in (2); in this clause ‘Daniel’s friend’ is the subject, and the object of the verb *fik* ‘pull’ is expressed by the verbal prefix *na-* ‘1.SG.PAT’. In (3), ‘Daniel’ is the subject, and the object of *fik* ‘pull’ is the possessed NP *ne-feela* ‘my friend’, which is also expressed by the verbal prefix *ha-*. In (2), the prefix *he-* ‘3.AL(ienable)’ indexes the third person features of ‘Daniel’; in (3), the prefix *ne-* ‘1.SG.AL(ienable)’ indexes a first person possessor (not ‘Daniel’).

- (1) [Neeng nuku di]_{subject} kalieta neeng nuku ha-fik.
 man one 3.AG elder man one 3.PAT-pull-IPFV
 ‘A man pulls an elderly man.’
- (2) [Daniel **he-feela**]_{subject} na-fik-e.
 Daniel 3.AL-friend 1.SG.PAT-pull-IPFV
 ‘Daniel’s friend is pulling me.’

⁵ An unpossessed, bare noun is interpreted as indefinite, while the numeral *nuku* ‘one’ can be used to overtly express indefiniteness.

- (3) Daniel [**ne**-feela]_{object} ha-fik-e.
 Daniel 1.SG.AL-friend 3.PAT-pull-IPFV
 ‘Daniel is pulling my friend.’

As indicated by the glosses, possessor marking in Abui is different for alienable and inalienable nouns. Alienable and inalienable nouns are formally distinguished by having an optional vs. obligatory possessive prefix: *faling* ‘axe’ in (4) may occur with or without a possessor prefix, while the body part *-min* ‘nose’ in (5) must take an obligatory possessive prefix. Within the prefix itself, the alienability distinction is encoded by a theme vowel. Prefixes with the vowel *e* are alienable, as illustrated in (4); prefixes with the vowel *a* signals that the possessed noun is inalienable, as illustrated in (5). Note that a third person possessor noun such as ‘Daniel’ in (4) and (5) precedes the possessed NP and forms a phrase with it.⁶

- (4) Daniel **he**-faling
 D. 3. AL-axe
 ‘Daniel’s axe’
- (5) Daniel **ha**-min
 D. 3.INAL-nose
 ‘Daniel’s nose’

Besides the alienability distinction, the present paper revolves around yet another distinction encoded in third person possessive prefixes: the distinction between “reflexive” and “non-reflexive” possessive prefixes. A “reflexive” possessive prefix encodes a referential relation between the subject and the possessor of the object in the clause. This is illustrated in (6a), where the reflexive possessive prefix *de-* ‘3. REFL.AL’ on the object *de-wil* ‘his child’ is coreferential with the subject *Daniel*. Using the prefix *de-* thus expresses unambiguously that Daniel is cradling his own child. In contrast, the non-reflexive possessive prefix *he-* on the object in (6b) is not bound by the subject. In this case, the child is possessed by someone outside of the clausal context; it is not Daniel’s child. The two prefixes differ only in their initial consonant. Reflexive prefixes may be alienable or inalienable, compare (6a) and (7a); as can the non-reflexive prefixes, compare (6b) and (7b). In what follows, we use the notion “reflexive *dV-*” as a cover term for both alienable and inalienable reflexive prefixes, and the notion “non-reflexive *hV-*” or “default *hV-*” non-reflexive as cover terms for both alienable and inalienable non-reflexive prefixes.

- (6) a. Daniel_j **de**-_jwil ha-buk-e.
 D. 3.REFL.AL-child 3.PAT-cradle-IPFV
 ‘Daniel cradles his (own) child.’
- b. Daniel_j **he**-_kwil ha-buk-e.⁷
 D. 3. NONREFL AL-child 3.PAT-cradle-IPFV
 ‘Daniel cradles his (someone else’s) child.’

⁶ The alienability distinction in Abui nouns is largely semantically based: the majority of nouns expressing body parts are inalienable. However, most kinship nouns (e.g. *wil* ‘child’, *maama* ‘father’) and some body parts (e.g. *toku* ‘leg’) fall into the class of alienable nouns, so the noun class distinction is also partially arbitrary.

⁷ The sequence *Daniel he-wil ha-buk-e* in (6b) allows two different readings, depending on intonation. The reading indicated by the subscripts in (6b) is attained by rising pitch on the final syllable of *Daniel*, indicating that this noun constitutes a separate (subject) NP; while falling pitch on the final syllable of *hewil* would mark it as the object NP of the clause. An alternative reading is invoked with rising pitch on the final syllable of *hewil*, thus marking [*Daniel he-wil*] as the (subject) NP of the clause (which does not have an object NP): [*Daniel_j he_k-wil*]_k *ha-buk-e* ‘[Daniel’s child]_k cradles him’. In this paper we focus on clauses with a simple subject NP and a possessed object NP such as the one in (6b) but possessor prefixes occur in more contexts, see the overview in (8)–(9) below.

- (7) a. D_i **da**-tang ha-fik-e.
3.AG 3.REFL.INAL-hand 3.PAT-pull-IPFV
'He is pulling his (own) hand.'
- b. D_i **ha**-_ktang nung⁸ ha-fik-e.⁹
3AG 3.NONREFL.INAL-hand SPC 3.PAT-pull-IPFV
'He is pulling his (someone else's) hand.'

In this paper, we consider the non-reflexive *hV*- prefix as the “default” or “unmarked” third person possessor prefix. The first motivation for doing so is that this prefix is found in a wider range of grammatical contexts than the reflexive prefix. It can refer to a possessor in an NP (as in (4) and (5)) – irrespective of whether that NP is the subject or the object of a clause. In addition, it can also refer to a possessor outside of the clausal context, as in (6b) and (7b). In contrast, the reflexive *dV*- is restricted to only one context: it only occurs on object NPs, where it always refers to the subject of a clause, as in (6a) and (7a). It cannot occur in a subject NP and never refers to an NP-internal possessor (that is, *Daniel de-wil* cannot be a subject and cannot mean ‘Daniel’s child’), and neither can it refer to a possessor outside of the clause (that is, *de-wil* cannot mean ‘someone else’s child’). In (8)–(9) we summarize the various grammatical contexts where reflexive *dV*- and non-reflexive *hV*- are found: only one grammatical context for the reflexive possessor (8), against four contexts for the non-reflexive, (9a–d).

- (8) *Reflexive possessor on object, without possessor N in NP: see example (6a).*
- (9) a. *Non-reflexive possessor on object, without possessor N in NP: see example (6b)*
b. *Non-reflexive possessor on object, with possessor N in NP*
[Daniel_j **he**-wil]_{obj} ha-buk-e.
D. 3.NONREFL.AL-child 3.PAT-cradle-IPFV
'(Someone) cradles Daniel's child.'/'Daniel's child is being cradled.'
- c. *Non-reflexive possessor on subject, without possessor N in NP*
[**He**-wil]_{subj} ha_{j/k}-buk-e.
3.NONREFL.AL-child 3.PAT-cradle-IPFV
'His child cradles him.'
- d. *Non-reflexive possessor on subject, with possessor N in NP*
[Daniel_j **he**-wil]_{subj} ha-buk-e.
D. 3.NONREFL.AL.child 3.PAT-cradle-IPFV
'Daniel's child cradles him.'

The second reason to analyze the non-reflexive *hV*- as the default possessive prefix is that it is much more frequent than the reflexive *dV*-. This is shown in Table 6, which reports the counts in 4:18 hours of natural conversations between speakers of 9–75 years which are part of the corpus collected by Saad (2015–2017).

Table 6: Tokens of “non-reflexive *hV*-“ and “reflexive *dV*-“ in Saad (2015–2017).

	“non-reflexive <i>hV</i> -“	“reflexive <i>dV</i> -“
Alienable	<i>he</i> : 206	<i>de</i> : 27
Inalienable	<i>ha</i> : 61	<i>da</i> : 3
Total	267	30

⁸ This sentence is unambiguous and the specific demonstrative *nung* does play a role in the possessor reference.

⁹ Agentive pronouns like *di* in (7b) cannot occur as possessors inside of NPs. Hence, (7b) does not allow the alternative readings relating to different phrase boundaries that was discussed for (6b) in footnote 8, where the possessor is a (proper) noun.

3.2 Malay

In contrast to Abui, Malay has only one construction to encode possessive relations. Possessive constructions all derive from a clausal construction with the verb *punya* ‘to possess’. Grammatically, the possessor is the subject of *punya* and the possessed is the object, as illustrated in (10)–(13). Possessors are expressed analytically as full NPs or pronouns preceding the possessed; there are no possessive affixes involved.

- (10) saya punya ruma
1SG possess house
‘I have a house’; ‘my house’
- (11) saya punya konyadu
1SG possess brother.in.law
‘I have a brother-in-law’; ‘my brother-in-law’

The possessive verb *punya* may be reduced to *pung* or *pu*, as in (12) and (13). The verb *punya* or its reduced forms have grammaticalized into a possessor marker within NPs (cf. Adelaar & Prentice 1996). Therefore, *pung* and *pu* are glossed as ‘POSS’ in such contexts (12)–(13). The third person construction *dia pung/pu* can be further abbreviated to *dep*, as in (14).

- (12) dia pung ana
3SG POSS child
‘his child(ren)’
- (13) dia pu badan
3SG POSS body
‘his body’
- (14) dep badan
3SG.POSS body
‘his body’

Unlike Abui, Malay does not specifically encode the “reflexive” referential relation between a clausal subject and the possessor of the object. This is illustrated in (15), which allows for either a reflexive or a non-reflexive possessive reading.

- (15) Daniel koko dep anak.
Daniel cradle 3SG.POSS child
‘Daniel cradles his (own) child.’; ‘Daniel cradles his (someone else’s) child.’

In the context of the present discussion, it is relevant to note that Malay reflects a [possessor-possessed] order that is also attested in Abui, as well as in the other Papuan languages of the region. This order is opposite to the [possessed-possessor] order of standard Indonesian (e.g. *anak saya* ‘child 1SG; my child’).

3.3 Summary: Differences between Abui and Malay possessive constructions

Abui possessive structures are more complex than those in Malay. They involve affixes encoding alienability distinctions¹⁰ on the possessed as well as prefixes coding the relatively subtle “reflexive” referential (binding) relation between a clausal subject and the

¹⁰ When surveying the data, there did not appear to be any striking variation in the marking of alienability, despite the fact that this could have emerged as an area sensitive to contact – Alor Malay does not encode the distinction, whereas Abui does. Encodings of alienability distinctions are often observed to be highly stable across time and insensitive to contact (Nichols 1992), and the lack of variation in this domain of Abui is no exception. This is probably due to the fact that all nouns in Abui belong to either the lexical class of

possessor of the object in the clause. This relation disambiguates between third person possessor of objects with referents within the clause and those with referents outside the clause. In contrast, Malay has no possessor affixes and no restrictions on binding relations between the subject of a clause and the possessor of its object.

4 The present study

4.1 Introduction

Given the typological differences in possessive marking strategies in Abui and Malay, this study aims to test whether there is variation in the expression of third person possessive marking among the four bilingual age-groups. From a linguistic point of view, the reflexivity distinction represents a suitable domain to investigate language contact effects among Abui-Malay bilinguals for two reasons: (i) it has been shown to be an area sensitive to contact, and (ii) the dominant language Malay lacks such a distinction.

First, while many areas of grammar are potentially prone to contact, the reflexivity distinction in possessive marking is particularly sensitive because it involves binding relations between the possessor of the object and either the subject of the clause (local binding) or a referent outside the clause (non-local binding). The Abui possessive system requires speakers to apply morpho-syntactic rules of possessive prefixation on the object of a clause, while at the same time determining whether the possessor of the object has the same referent as the subject of the clause, or a referent that is outside of the clausal domain. (For example, introduced earlier in discourse, recoverable by applying knowledge of the world or by considering the non-linguistic context in which the clause was uttered.) This task requires considerable computation effort.¹¹

Second, lacking the reflexive distinction in its possessive marking, Malay is underspecified compared to Abui. The one Malay third person possessive construction *dia punya* '3SG POSS' allows for both local and non-local referential interpretations, while in the Abui system, there are two forms, one of which is dedicated to encode locally bound antecedents, the other for other non-local antecedents. Following Sorace & Serratrice (2009: 199), the underspecification in Malay is expected to "give rise to ambiguity and optionality in the L2 [Abui] because it allows a wider range of possible mappings". Kim & Montrul (2004) and Kim, Montrul & Yoon (2009) show that when languages with two different binding systems come into contact, the binding relations of the dominant language are transferred to the weak language. Thus we expect that the underspecified nature of binding in Malay will transfer to Abui in the Malay dominant bilingual groups.

Given these considerations, we investigate the reflexivity distinction in possessive marking among Abui-Malay bilinguals. More specifically, we address the following questions: (i) Is there variation in third person possessive constructions across the four age groups of Abui bilinguals? (ii) If there are any significant differences in their use of possessive constructions, how are age and gender linked to the variation? (iii) What do differences in production and comprehension tell us about speakers' knowledge of the reflexivity distinction?

Having had less exposure to Abui than the two other groups, the (pre-)adolescents and young adults are expected to have difficulty with the reflexivity distinction. As far as

alienables or the class of inalienables; and these class memberships are partly semantically determined and partly arbitrary (see footnote 6). Variation that is related to lexicalised semantic classes of nouns refers to a different language module than variation in possessor marking that is related to syntactic binding relations. The latter area is known to be sensitive to contact (Sorace & Filiaci 2006; Sorace & Serratrice 2009).

¹¹ The consensus in the cognitive psychology literature on bilingualism is that both languages are always simultaneously active regardless of language mode (see references cited in Sorace 2011: 24). This need to constantly inhibit the unwanted language gives bilinguals an advantage over monolinguals in non-linguistic tasks involving executive control.

speaker gender is concerned, we expect young females to perform better than their male peers as they spend more time at home and have less contact with people outside the community (see Section 2). Pre-adolescents and young adults are expected to simplify the system by generalizing one of the two forms. Possessives expressed with a marked form are more likely to be replaced by a form that is less marked (Tingsell et al. 2011). The Abui default non-reflexive *hV*- prefix is far more frequent and has wider distributional patterns than the reflexive *dV*- prefix, which is less frequently used in Abui, and also cross-linguistically rarer. The latter may thus be considered the more marked possessive prefix (Holm 2000). We expect that younger speakers generalize the default prefix *hV*- to contexts that in the language of the elders are reserved for the *dV*- prefix only.

Production data only does not provide information on whether the variation reflects incomplete knowledge of the reflexive possessive distinction or whether it is only a surface problem during oral production. It might be that the young Abui-Malay bilinguals struggle to produce the reflexive form in the correct context but still retain enough knowledge to recognize it in comprehension. The disparity between production and comprehension has been known for quite some time, with most studies showing that features which are problematic for speakers in L2 production may not necessarily be so in comprehension (Jarvis & Pavlenko 2008). This is especially relevant when considering the socialization process: speakers develop passive knowledge in childhood and adolescence and begin speaking actively in early adulthood. Passive knowledge can be tested using judgment data from comprehension tasks (Sorace & Filiaci 2006; Meakins & O'Shannessy 2010; Onar Valk 2015; Stadthagen-González et al. 2017). Following the predictions of the Missing Surface Inflection Hypothesis (Prévost & White 2000a), we expect that speakers will exhibit passive knowledge of the reflexivity distinction, performing better in comprehension than in production.

In order to answer the research questions and test our predictions, we conducted two studies: one on oral production: semi-spontaneous speech elicited by means of video clips depicting various types of events (Section 4.2); and another on aural comprehension: grammaticality judgements elicited by means of an oral forced-choice task (Section 4.3).

4.2 Study 1: Production data

The aim of the production data study is to compare the use of possessive prefixes in semi-spontaneous speech across the four Abui age groups. The methodology of this study is discussed in Section 4.2.1, while the results are presented in Section 4.2.2. In the general discussion in Section 5, we will elaborate on the results in more detail and connect them to the results of the study on comprehension data presented in Section 4.3.

4.2.1 Methodology

Data were obtained from a total of 66 participants, divided into four groups according to age (see Section 2). Information about the participants is laid out in Table 7.

Table 7: Abui-Malay bilingual participants in Study 1 (production).

Group	Age range	M	F	Total
(pre-)adolescents	9-16 (mean 13.47)	9	10	19
young adults	17-25 (mean 21.24)	10	9	19
adults	26-34 (mean 30.29)	10	9	19
elders	40-75 (mean 50.44)	4	5	9

Oral production data were obtained using visual elicitation material. The elicitation material consists of a set of 40¹² short video clips referred to as the *Surrey stimuli*, which are specifically designed to elicit pronominal markers on verbs in the Alor-Pantar languages (see Fedden & Brown 2014; Fedden et al. 2014). The *Surrey* clips show a wide range of transitive events, and a smaller number of intransitive events. The full set of video clips with a brief description of their content is presented in Table 8. The *Surrey* stimuli were played on a laptop in front of the participant. As we were interested in the effects of language contact, we set up a bilingual test situation by giving instructions in Malay to describe in Abui “what is going on”, accompanied by the instruction that they could resort to Malay should they struggle to find the right Abui words to describe the clips. Participants were video-taped while performing the task. For the (pre-) adolescent group, the instructions were given in Malay by a school teacher, as an authority from whom the children were used to following instructions. All the responses to all the clips were transcribed and annotated, and then double checked by older, native speakers for grammaticality and felicitousness.

Table 8: The *Surrey* stimuli video clips.

Code	Description of clip	Code	Description of clip
C01	man pulls other man	C21	man standing and leaning on house
C02	girl leans on man	P01	man smells other man
C03	people dancing	P02	man smells cheese
C04	boy steps on sleeping man	P03	a burning match goes out
C05	man sleeping on bed	P04	man sitting, leaning against wall and waking up
C06	man sitting against wall and dozing off	P05	a short man and tall man are standing
C07	woman sitting and laughing	P06	boy hears noise and is startled
C08	man holds snake, gives it to girl who is afraid	P07	boy is sleeping; man comes and wakes him up
C09	water being poured into glass	P08	bent person on all fours with rock on back
C10	man lying down, talking to himself	P09	man walks over and trips on log
C11	man sitting against house and eating banana	P11	banana falls on log
C12	man is standing, boy runs over to him	P12	man hears other man
C13	one man is standing, another walks into him	P13	man holds tree
C14	man walks over to a wall and sits down	P14	small log placed on big bent plank
C15	coconut tree; one coconut falls	P15	man holding girl
C16	man walking, bumps into, and then hugs tree	P17	man standing
C17	4 pieces of wood of different size	P18	three stones of different sizes
C18	girl pulling log	P19	banana falls on stomach of man lying down
C19	man walks over and sees axe with blood	P20	man running
C20	man walks and steps on banana	P21	man leaning on wall, gets up, and walks away

¹² The initial set had 42 clips, but two were not available when downloading the set from <http://www.smg.surrey.ac.uk/projects/alor-pantar/pronominal-marking-video-stimuli/>.

For the present study, all the object NPs in all the utterances were tagged as either unpossessed or possessed. The unpossessed NPs were excluded from this study.¹³ The possessed object NPs were subsequently coded as matches or mismatches according to whether or not the possessive prefix matched the type of environment. For instance, if the participant used the reflexive prefix *dV-* in a reflexive environment, or the non-reflexive prefix *hV-* in a non-reflexive environment, these were coded as “reflexive match” and “non-reflexive match”, respectively (Table 9, coding categories (a) and (c)). In contrast, the possessed NPs were coded as “reflexive mismatch” or “non-reflexive mismatch” if the participant used the default non-reflexive prefix in a reflexive environment and vice versa (Table 9, coding categories (b) and (d)).

It is important to underline that the elicitation task with the 40 Surrey clips was not hypothesis-driven, but rather served to collect a corpus in which variable grammatical patterns could be identified. As a result, it was not a completely controlled production task, and did not have a pre-determined amount of reflexive or non-reflexive targets in the responses that were elicited: these were coded as such per utterance and per speaker after the recording had been done. The (non-)reflexive environments were determined on the basis of linguistic and extra-linguistic information, and corroborated by feedback from older speakers.

Using video elicitation stimuli, both the referents and their real world context are known and kept constant, so that it is possible to reliably interpret the target of the possessed object NPs used in the utterances. For example, the responses to clip C11 (man sitting against a wall of a house eating a banana) would for some speakers be ‘A man is eating a banana’, while others would respond with a possessed object, ‘A man is eating his banana’. In this particular instance, the utterance would be considered to have a reflexive environment based on the context of the depicted event. The clip shows a context with only a man and a banana present, which favours the interpretation that the banana is possessed by the man who is present in the clip, not by someone else who is not visible in the clip. The same reasoning was applied to clips depicting prototypical non-reflexive environments. For example, clip P19 (banana falls on stomach of man lying down) was described by most speakers as ‘A banana falls on his stomach’. Is ‘his stomach’ used in a reflexive or a non-reflexive context? Although ‘banana’ is the subject of the clause it can never be coreferential with the possessor of ‘stomach’, so this utterance was coded as a

Table 9: Categories used to code the possessed NPs in the oral production data.

Coding categories			
(a) REFLEXIVE MATCH:	reflexive prefix	reflexive environment	✓
(b) REFLEXIVE MISMATCH:	non-reflexive prefix	reflexive environment	✗
(c) NON-REFLEXIVE MATCH:	non-reflexive prefix	non-reflexive environment	✓
(d) NON-REFLEXIVE MISMATCH:	reflexive prefix	non-reflexive environment	✗

¹³ Some might argue that using a (zero-marked) unpossessed object NP is the result of an avoidance strategy used by speakers who do not want to make a choice between the reflexive and non-reflexive possessive prefixes. Evidence for this particular avoidance strategy would be, for example, the observation that the group of (pre-) adolescents use more unpossessed NPs than the elders in descriptions of the same video clip. Inspection of our corpus does not provide such evidence. But even if it did, there are good reasons to exclude the unpossessed NPs from this study, because their use is determined by many other factors besides possibly being used as an avoidance strategy. For example, the choice of object noun determines to a large extent whether or not it will be possessed: a rock is intrinsically unpossessed, a child is intrinsically possessed; so an unpossessed object NP with the noun rock is expected, but an unpossessed object NP with the noun child is not. In general, variation in using unpossessed and possessed NPs has dimensions that are quite different from those of variation in using a reflexive or a non-reflexive possessive prefix, so we will not compare these here.

non-reflexive target. In all cases, feedback from older speakers who were asked to comment on the felicitousness of utterances supported the (extra)-linguistic interpretations.

At the same time, many clips allow more than one possible interpretation. For example, clip C01 (man pulls other man), one speaker responded ‘a man is pulling his friend’, in which case ‘his friend’ would be coded as a reflexive target; whereas another speaker responded ‘a man is pulling another man’s hand’, in which case the utterance was tagged as a non-reflexive target, because the subject of the clause ‘a man’ is not the possessor of the other man’s hand. In other words, different speakers may have different targets responding to the same clip. This is why we determined the target for every utterance of every speaker, as opposed to only one possible target per clip.

4.2.2 Results

This section presents the results regarding the use of reflexive and the non-reflexive prefixes in the semi-spontaneous speech of four groups of Abui speakers. We also test whether gender plays a role in the selection of the appropriate prefix.

First, we report the results of reflexive prefix mismatches. An example of a reflexive match and mismatch is provided in (16). The utterances in (16) are produced in response to Surrey stimulus P15 (a man holding a girl). In their responses, speakers refer to the girl as *wil* ‘child’ (in the sense of offspring).¹⁴ The target form is the reflexive prefix *de-*: the scene depicted in the video clip gives no reason to suggest that the child held by the man is another person’s child. To describe the clip, the elder speaker uses the reflexive form *de-* (16a), whereas the (pre-) adolescent speaker uses the non-reflexive *he-* (16b).

(16) *Responses to P15 (a man holding a girl)*

a. *40-year-old female (Group: elders)*

Neeng kalieta nuku oro **de**-wil ha-buk-e.
 man old one DST **3.REFL.INAL**-child 3.PAT-cradle-IPFV
 ‘A man cradles his (own) child (there).’

b. *9-year-old female (Group: (pre-)adolescents)*

Neeng nuku **he**-wil ha-buk-e.
 man one **3.NONREFL.INAL**-child 3.PAT-cradle-IPFV
 ? ‘A man cradles his (someone else’s) child.’
 Intended: ‘A man cradles his (own) child.’

Table 10 displays the proportion of reflexive mismatches such as the one in (16b) averaged over the speakers. The higher the mean, the more frequently the participants used the non-reflexive prefix *hV-* instead of the reflexive prefix *dV-*.

A non-parametric Kruskal-Wallis test¹⁵ shows a statistically significant difference between the proportion of mismatches in the four groups ($H(3) = 168.978, p < .001$). A post-hoc pairwise comparison shows that (pre-) adolescents produce mismatches significantly more often than the other three groups (p 's $< .001$), using the unexpected prefix in 58% of the cases. They are followed by the young adults, who produce significantly fewer mismatches than the (pre-) adolescents, but significantly more than adults and elders. No statistical difference was found between adults and elders ($p = .996$). The graph in

¹⁴ The term *moqu* is used for ‘child’ in the sense of young person.

¹⁵ We used the non-parametric Kruskal-Wallis test instead of an ANOVA because the data were not normally distributed (Field 2005). A linear mixed-effects model was also attempted; however, the results were not interpretable due to complete separation, as can be seen in Table 10, where the group of elders has a proportion of 0/66.

Table 10: Reflexive prefix mismatches in semi-spontaneous speech production.

Group	Speakers	Tokens	Mean	SD
(pre-)adolescents	19	52/90	58%	.49
young adults	19	31/198	16%	.36
adults	19	2/202	1%	.09
elders	9	0/66	0	.0

Note: Tokens refers to the global count of mismatches and instances, Mean and (S)andard (D)eviation are of the individual speakers' proportions.

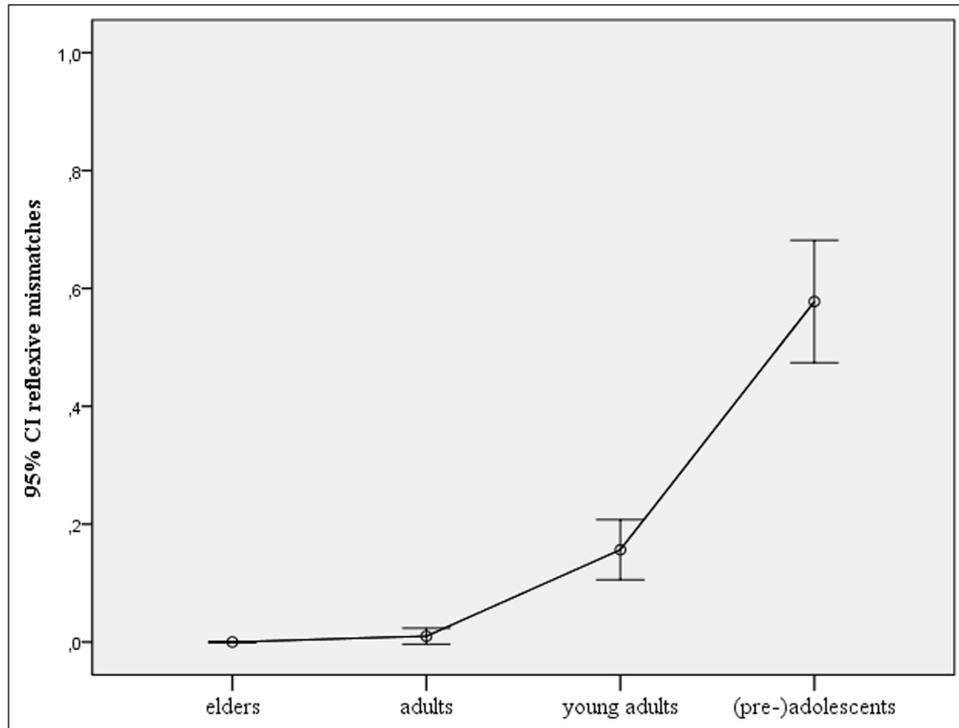


Figure 2: Mean and 95% (C)onfidence (I)nterval of reflexive mismatches across the four Abui-Malay age groups.

Figure 2 visualises the results, highlighting a striking increase in reflexive mismatches in the younger age groups.

In Section 2, we saw that young females spend more time with elder speakers and have more territorially bounded networks than male speakers, hence are expected to be more conservative than their male peers. As such, we examined the relationship between reflexive mismatches and gender using a chi-square test. We investigated such a relationship in the (pre-)adolescent and young adult groups, as these are the two groups that significantly differ from the control group of elders. These results are summarized in Table 11.

The relationship between mismatches and gender was significant in the (pre-)adolescent group, $X^2(1, N = 90) = 6.55, p < .01$. Among the females in this age group the proportion of mismatches is about 44%, as opposed to 71% among their male peers. For the young adult group no relationship was found between gender and reflexive mismatches, $X^2(1, N = 198) = .37, p = .34$.

Table 12 displays the proportion of *non-reflexive* mismatches, namely the use of a reflexive prefix in a non-reflexive environment. This type of mismatch is virtually absent in the

Table 11: Reflexive matches and mismatches between males and females in the (pre-) adolescent and young adult groups in semi-spontaneous speech production.

Group	Gender	Reflexive match	Reflexive mismatch	Total
(pre-)adolescents	male	13	32	45
		28.9%	71.1%	
	female	25	20	45
		55.6%	44.4%	
young adults	male	87	18	105
		82.9%	17.1%	
	female	80	13	93
		86.0%	14.0%	

Table 12: Non-reflexive prefix mismatches in semi-spontaneous speech production.

Groups	Speakers	Tokens	Mean	SD
(pre-)adolescents	19	1/39	3%	.16
young adults	19	3/104	3%	.16
adults	19	0/91	0	.0
elders	9	0/41	0	.0

Note: Tokens refers to the global count of mismatches and instances, Mean and (S)tandard (D)eviation are of the individual speakers' proportions.

dataset. A non-parametric Kruskal-Wallis test showed no significant difference between the age groups ($H(3) = 3.753, p = .289$).¹⁶

In sum, speakers are far more likely to overgeneralize the non-reflexive *hV* – prefix to reflexive environments rather than using the reflexive *dV*- prefix for non-reflexive environments. (Pre-) adolescent and young adult speakers are simplifying the system by extending the use of the non-reflexive prefix *hV*- to reflexive contexts. Within the (pre) adolescent group, gender has an effect such that males overgeneralize the *hV*- prefix more frequently than their female peers.

4.3 Study 2: Comprehension data

In this second study we examine comprehension data from the four Abui age groups. The methodology of the study is described in section 4.4.1, and the results are presented in section 4.4.2. In the general discussion in section 5, we will elaborate on the results in more detail and connect them to the results of the study on production.

4.3.1 Methodology

Comprehension data were obtained from a total of 60 participants during a two-month fieldtrip in 2017. Most of the participants who took part in the production task also participated in the comprehension task. In total, 9 out of 66 participants from the production task were not available for the comprehension task.¹⁷ To compensate, three new speakers were added for the comprehension task. Information about the participants is laid out in Table 13.

¹⁶ Yet it is worth noting that the only four tokens of non-reflexive mismatches are attested in the younger groups.

¹⁷ These speakers had moved to other villages, both in and outside of Alor.

Table 13: Abui-Malay bilingual participants in Study 2 (comprehension).

Group	Age range	M	F	Total
(pre-)adolescents	9–16 (mean 13.78)	9	9	18
young adults	17–25 (mean 22.28)	9	5	14
adults	26–34 (mean 29.52)	9	8	17
elders	40–75 (mean 52.72)	5	6	11

Comprehension data were collected by means of a forced-choice task. In the forced-choice task designed for this study participants were presented with a video clip and a pair of sentences spoken by a native speaker. Participants were asked to choose from each pair the sentence that they found more acceptable in relation to the video clip. Illustrations of two video clips with their two respective sentences are in (17)–(18). In these examples, option (a) represents the target.

(17) *Target: Reflexive possessive. Video clip C01 [man_j pulling his_j friend]*

- a. [Neeng nuku]_j **de**_j-feela ha-fik-e.
 man one 3.REFL.AL-friend 3.PAT-pull-IPFV
 ‘A man_j is pulling his_j friend.’
- b. [Neeng nuku]_j **he**_k-feela ha-fik-e.
 man one 3.NONREFL.AL-friend 3.PAT-pull-IPFV
 ‘A man_j is pulling his_k friend.’

- (18) a. [Neeng nuku]_k mon hoo-puna. Dikaang di [moqu fila]_j
 man one snake 3.GOAL-hold then 3.AG child small
 hoo-ha-tang haba di **he**_k-mon hieng mielang.
 3.GOAL-3.PAT-give but 3.AG 3.NON.REFL.AL-snake 3.see be.afraid
 ‘A man_k is holding a snake. Then he gives it to a child_j but she is afraid of his_k snake’
- b. [Neeng nuku]_k mon hoo-puna. Dikaang di [moqu fila]_j
 man one snake 3.GOAL-hold then 3.AG child small
 hoo-ha-tang haba di **de**_j-mon hieng mielang
 3.GOAL-3.PAT-give but 3.AG 3.REFL.AL-snake 3.see be.afraid
 ‘A man_k is holding a snake. Then he gives it to a child but she is afraid of her_j snake.’

The task contained 30 video clips and 30 pairs of sentences describing the action happening in the clips. Of these 30 video clips, six targeted a possessive relation (three a reflexive one and three a non-reflexive one). The other video clips tested other features and functioned as distractors for the purpose of this study. The three reflexive possessive target video clips were taken from the Surrey stimuli (see Section 4.2.1). For the non-reflexive target sentences, two of the clips were taken from the Surrey stimuli while one was recorded specifically for the forced-choice task, as the Surrey stimuli did not provide enough contexts to elicit such a response. The new clip showed the researcher smoking a cigarette, and then another Abui speaker snatching it from his hand and smoking it.

After the target video clips had been selected, the first author discussed with several native speakers which sentences were most appropriate for the associated video clip. The sentences were read out by a native speaker and recorded. Subsequently, the task was piloted with two other native speakers above the age of 40 to test whether the target sentences were fully grammatical and felicitous to them. The 30 video clips were then randomly shuffled into two experimental sets, A and B. Half of the participants were

assigned to set A while the other half were assigned to set B. The sentences had also been randomized, so that the target was sometimes first, and other times second. Participants were always administered two trial rounds in the beginning in order to acclimatize to the task. The answers were then filled into an Excel sheet. All sessions were audio recorded.

4.3.2. Results

The forced-choice task required the participants to select between two sentences, one of which was deemed to better describe what was happening in the video clip. Table 14 reports the proportion of reflexive mismatches, namely the choice of non-reflexive sentence in response to a video clip depicting a reflexive relation (e.g. P15 man_k cradling his_k child). The two older groups always chose the sentence where the object is marked with the reflexive *dV*- prefix, so that their proportion of mismatch is zero. The young adults performed similarly to the older groups, with only two mismatches. The (pre-)adolescent group shows a higher proportion of mismatches, indicating that they sometimes selected the sentence where the object is marked with the non-reflexive *hV*- prefix, even though the video clip showed a reflexive possessive relation.

The Kruskal-Wallis test shows a significant difference in the proportion of reflexive mismatches across the four groups ($H(3) = 29.853, p < .001$). A post-hoc pairwise comparison shows that the proportion of mismatches produced by (pre-)adolescents is significantly higher than those produced by the three older groups (p 's $< .001$). Conversely, there is no statistical significant difference among the groups of young adults, adults, and elders. The (pre-)adolescents choose the expected sentence with the reflexive *dV*- prefix in 72% of the cases; in the remaining 28% they select the sentence with the non-reflexive *hV*- prefix. This mismatch occurs in seven speakers (out of 18), of which six are male and one is female.

To examine the relation between mismatches and gender in the (pre-) adolescent group, a chi-square test shows a significant relation between mismatches and gender, $X^2(1, N = 54) = 6.59, p < .05$. As in production, female (pre-) adolescent speakers are more likely to select the correct reflexive sentence, while the proportion of mismatches is higher for their male peers. These results are summarized in Table 15. The three mismatches found in the female group are all made by the same speaker.

Table 16 reports the proportion of non-reflexive mismatches: choosing a reflexive sentence in response to a video clip depicting a non-reflexive relation (e.g. C08 man carrying snake; girl fears his snake). The three older groups make virtually no error, as they almost always choose the sentence where the object is marked with the non-reflexive *hV*- prefix. The (pre-)adolescents sometimes select the sentence where the object is marked with the reflexive *dV*- prefix, even though the video clip showed a non-reflexive possessive relation.

The Kruskal-Wallis test shows a significant difference in the proportion of non-reflexive mismatches across the four groups ($H(3) = 24.500, p < .001$). A post-hoc pairwise comparison shows that the proportion of mismatches produced by the (pre-)adolescents

Table 14: Reflexive mismatches in the forced-choice task.

Groups	Speakers	Tokens	Mean	SD
(pre-)adolescents	18	15/54	28%	.45
young adults	14	2/42	5%	.21
adults	17	0/51	0	.0
elders	10	0/30	0	.0

Note: Tokens refers to the global count of mismatches and instances, Mean and (S)tandard (D)eviation are of the individual speakers' proportions.

Table 15: Reflexive matches and mismatches between male and female in the (pre-) adolescent group in the forced-choice task.

Group	Gender	Reflexive match	Reflexive mismatch	Total
(pre-)adolescents	male	16	12	28
		57.1%	42.9%	
	female	23	3	26
		88.5%	11.5%	

Table 16: Non-reflexive mismatches in the forced-choice task.

Groups	Speakers	Tokens	Mean	SD
(pre-)adolescents	18	15/54	28%	.45
young adults	14	3/42	7%	.26
adults	17	1/51	2%	.14
elders	11	0/30	0	.0

Note: Tokens refers to the global count of mismatches and instances, Mean and (S)andard (D)eviation are of the individual speakers' proportions.

was significantly higher than those produced by the three older groups (p 's < .005). Conversely, the three older groups do not demonstrate any statistically significant difference. This result is unexpected, given what has been observed so far. (Pre-)adolescents are found to overgeneralize the non-reflexive *hV*- prefix to reflexive contexts both in production and in comprehension. We expected them, therefore, to perform at ceiling when they were asked to respond to video clips depicting non-reflexive relations. However, 14 out of 18 participants, at least in one case, fail to attain the target, selecting the sentence with the reflexive *dV*- prefix. This behavior is found across participants, with no difference between male and female, $X^2(1, N = 54) = .22, p = .433$). The fact that, unlike in the other tasks, mismatches are found in almost all the speakers regardless of gender may indicate that these are instances of hypercorrection rather than systematic errors.

5 Discussion

We investigated how Abui-Malay bilingual speakers use possessive constructions, addressing three major questions: (i) Is there variation in third person possessive constructions across the four age groups of Abui-Malay bilinguals? (ii) If there are any significant differences in their use of possessive constructions, how are age and gender linked to the variation? (iii) What do differences in production and comprehension tell us about speakers' knowledge of the reflexivity distinction?

As predicted, pre-adolescents (age 9–16 years) showed the most variation of the four groups in overgeneralizing the non-reflexive possessive prefix to reflexive contexts. This confirms that speakers consider the non-reflexive *hV*- prefix as the default to mark possession on nouns, while the reflexive *dV*- prefix is seen as the marked form. The simplification mechanism attested is overgeneralization of the semantically least specified form, interpreted here as the default form. Young adults (17–25 years) also differed significantly from adults (26–34 years) and elders (40–75 years), although they showed less variation than the younger group of pre-adolescents. This distribution suggests that (pre-)adolescents and to some extent young adults are losing the reflexivity distinction, while for adults and elders, the reflexivity distinction is still obligatory.

Gender was found to be linked to the variation in the group of (pre)-adolescents, where females were more conservative while males accounted for most of the variation. The gender differences are argued to relate to the differences in social networks of Abui (pre-) adolescent females and males. Abui girls have territorially bounded social networks (Milroy & Milroy 1985), spending more time with other female relatives (mother, grandmother, aunts) attending to domestic chores such as fetching pig food and firewood, cooking, and cleaning. In a lot of these activities, despite often being directly addressed in Malay, they obtain passive knowledge of Abui because they are surrounded by Abui speaking adults. In addition, sometimes they are addressed directly in Abui as many older women do not always feel comfortable speaking Malay. Boys, on the other hand, spend a considerable amount of time away from their hamlet, playing with other boys. Typically, they speak Malay with their peers, as Malay has very high prestige among adolescents. This strongly suggests that young girls must have more exposure to Abui relative to boys.

The finding that social networks are different among younger generations and thus yield gender differences has also been reported in the Cajun English speech community (Dubois & Horvath 1999). However, the observation that (pre-)adolescent males are the agents of linguistic change stands in contrast to studies reporting that role for females instead. This was found to be the case for urban communities (Labov 1990; Campbell 2013) but also for indigenous minority communities such as the K'iche' of Guatemala (Romero 2008) and the Garifuna of Belize (Ravindranath 2008) (cited in Stanford & Preston 2009: 10). It seems that people of either gender can be the agents of change, depending on the specific social practices and roles that females and males carry out in a given community, and the type of social networks they have (Eckert & McConnell-Ginet 1999). In language change, the factor of gender appears to be culture-specific (Labov 1989; Sankoff 1994; Dubois & Horvath 1999). Before turning to the next point of discussion, it is important to note that there were no gender effects for any of the other groups. This means that (in Abui) the social network has an effect only for (pre)adolescents.

Age and gender of speakers are thus relevant variables in explaining the observed variation, and they are also crucial characteristics of the type of bilingualism studied here. In fact, exposure to and use of Abui are variable, and increase as an individual's age increases: as many parents put it, "We need to raise our children in Malay so that they do well at school. When they grow up, they will learn Abui from their peers, simply by living in the community". This implies that the acquisition of Abui in Takalelang involves a prolonged period of passive knowledge up until adolescence when speakers gradually begin developing active knowledge.

To test the implications this type of bilingualism might have on outcomes of contact, we compared speakers' (i) (pre)-school exposure to Abui, and (ii) current exposure to Abui. Since (pre-)adolescents were raised mostly in Malay and still speak predominantly Malay with their peers, they have low (pre)-school exposure and also low current exposure to Abui. As such, they may be characterized as active-passive bilinguals (Kulick & Terrill to appear): they have passive knowledge of Abui, can speak it if called upon, yet rarely ever do. As Malay-dominant speakers, the (pre-)adolescents appear to be losing the reflexivity distinction in their speech.

Young adults share with (pre-)adolescents a similar low level of (pre)-school exposure to Abui, yet have higher current exposure. They presumably also had passive knowledge growing up, as they claim they spoke mostly Malay during childhood, but now speak Abui more as their prominence in the community rises and they have more direct contact with elders. This low quantity of Abui input in their (pre)school years explains why some young adult speakers have problems with the reflexivity distinction, while their current increased quantity of Abui input may explain why they have fewer problems than (pre-)adolescents.

In addition, while the *quantity* of input that the (pre-)adolescents and the young adults received in (pre)school years may have been roughly similar, as depicted in Table 2 and Table 3, the *quality* of the input they received is likely to have been different. The reason for this lies in the adjacent age groups: (pre-)adolescents receive some input from young adults, who already show some variation. It has been observed that variation in children and teenagers is likely to be enhanced by variable input received from older peers, as opposed to input received from the parental generation (McConvell 2008), while children are also known to increase the frequency of an innovative form (Labov 1989; Sankoff 1994). Young adults, on other hand, receive input from adults and elders, who as the results show, retain active and passive knowledge of the possessive prefixes.

Considering the type of bilingualism found among the four age-groups with varying amounts of passive and active knowledge of Abui, we tested differences in their production and comprehension. We predicted that (pre-)adolescent and young adults would perform better in the comprehension task than in the production task, because we still expect them to retain knowledge of the reflexivity distinction, despite the fact that it poses problems in production. Passive comprehension of language requires less processing effort than active production (Onar Valk 2015). In addition, a number of studies show that while speakers appear to have trouble producing inflectional forms on the surface, they actually retain knowledge of the underlying rule (Prévost & White 2000a; b).

This prediction was borne out: (pre-)adolescents selected the target sentence significantly more often in the comprehension task than in the production task. This fits in neatly with self-reports from members of the community, suggesting that children and adolescents can understand the language but struggle to speak it. A similar but less significant difference between comprehension and production was observed in the young adults, while adults and elders performed at ceiling in both comprehension and production. Within the (pre-)adolescent group, we found that there were significant differences between males and females, with males attaining the reflexive target much less frequently – in line with the production data, for reasons discussed above.

That (pre-)adolescents and young adults performed better in comprehension than in production tells us that both groups have knowledge of the grammatical distinction of reflexivity, but that this knowledge is not always applied during oral production. This provides evidence in support of the Missing Surface Inflection Hypothesis (Prévost & White 2000a), which states that L2 learners have underlying knowledge of a given inflection category or feature, but fail to instantiate it during oral production (Lardiere 1998a; b; Lardiere 2000; Prévost & White 2000a). This will lead speakers to resort to a default form, which is indeed what we observe in the present study, where speakers resort to the more general, non-reflexive possessor prefix. Ideally, evidence for the MSIH arises by examining multiple grammatical environments in which a given feature manifests itself (e.g. by examining how gender in Dutch manifests itself in articles, demonstratives, pronouns, adjectives, etc.). However, since it is not possible to test the Abui reflexive possessive in a different grammatical environment (because it only manifests itself in one), we tested whether speakers retain knowledge of the feature by comparing production and comprehension data.

One unexpected result in our study was that, in the forced-choice task targeting the non-reflexive prefix *hV-*, (pre-)adolescents performed worse in comprehension than they did in production. We propose that this might be due to a task effect for several reasons. First, Abui bilingual speakers may perform poorly in comprehension tasks, because their mode of Abui acquisition is oral, and they do not receive any kind of formal instruction in Abui. Therefore, they might have little metalinguistic awareness of their language and little experience in being tested in Abui. This observation is in line with the results of a study conducted by Montrul (2011) on L2 and heritage speakers. According to Montrul

(2011: 189), there is a direct relationship between mode of acquisition and type of task, such that heritage language speakers are better at oral tasks that minimize metalinguistic knowledge, while L2 speakers are better at tasks that are more explicit and metalinguistic. Although Abui bilinguals are different from the prototypical heritage speakers in Montrul's study, they may share with them the unfamiliarity with certain type of tasks. Secondly, another possible task-effect is the length of the sentences in the forced-choice task. The sentences developed for these stimuli involved a higher processing load than for the reflexive target set: two out of the three trials used a combination of two sentences in order to elicit a non-reflexive meaning, while all three trials of the reflexive target consisted of only one sentence. The reason for this is that in the non-reflexive targets the possessor referred to by the prefix is outside the clause, so an additional clause introducing the possessor was necessary in two of the trials. In the reflexive targets, the possessor is simply the subject of the clause, so adding an extra clause was not necessary. Thirdly, one reviewer suggested that another effect may be related to the interpretation of the reflexive possessive inflection as a marker of age by younger speakers (i.e. "older people say this"), as the person recorded reading the two sentences was a lady aged 40 years old of the *kalieta* 'elders' group. Finally, considering that we observed gender differences in the reflexive target in both production and comprehension, the fact that there were no gender differences in the comprehension part of the non-reflexive target may be another indicator that the results in this part of the comprehension task are more likely due to task effects. Taken together, these results lay the platform for further research, and we suggest that a follow-up forced-choice study would need to control for sentence length, as well as for acoustic properties. Specifically, we would need to also record a young speaker to see whether the voice reading the two alternatives affects the acceptability of reflexive forms.

The methods and findings of this study are a direct answer to the call by Ross (2013) that, in order to develop models of contact-induced change which allow us to reconstruct the processes that brought about these outcomes, we need to collect more studies examining a linguistic variable across age-groups. These studies should focus on the social setting and the relevant variables that might account for the variation. Two findings from the current paper directly contribute to Ross's approach.

First, as Ross suggests, in studying language contact and change, it is imperative to focus not only on the language of children or adults, but to pay particular attention to the language of (pre-)adolescents as they are the most likely agents of change. Our study shows that the (pre-) adolescents of the Takalelang community indeed show the most variation when compared to adult Abui L1 speakers.

Second, our study offers somewhat diverging evidence from the two types of contact-induced processes of change presented in Ross (2013): bilingually-induced change and shift-induced change. While on the one hand, the Abui setting is more characteristic of relatively stable bilingualism, the outcome of the contact, simplification, is more similar to what happens after a shift (Ross 2013: 30). We suggest that the explanation lies in the type of bilingualism found in the Abui community. It is well known that different types of bilingualism have different outcomes of contact (O'Shannessy & Meakins 2012) and that outcomes from one type may not necessarily be applied to others (Ameel et al. 2009; Ross 2013). For example, simultaneous bilingual child learners have been shown to converge on monolingual-like targets (Döpke 2000) while later sequential bilinguals do not (MacWhinney 1987; Cook et al. 2003; O'Shannessy & Meakins 2012). However, many Abui speakers are a hybrid between sequential and simultaneous bilinguals: they acquire receptive competence in the language during childhood, but become active speakers post-adolescence. This type of bilinguals is highly underrepresented in the bilingualism and variationist literature, but we expect it to be much more widespread in Indonesia and Melanesia (Nevins 1998; Bowden 2002; Schokkin 2017).

Before concluding the paper, one question that was not empirically addressed in this paper but was often alluded to is whether the variation observed in the (pre-)adolescent group will lead to a fully-fledged change (following the apparent-time construct) or whether this group will learn the reflexivity distinction as it grows older (age-grading). At this point, without a real-time study, it is impossible to ascertain whether age-grading will nullify the observed variation in the young speakers, or whether they will continue to show it when they become adults. A recent review by Sankoff (2006) suggests that age-grading is much less widespread than previously thought, and that changes detected in younger groups often carry through as speakers grow older. In addition, Kerswill (1996: 198) points out that during the period of adolescence (age 16 at the latest), speakers “no longer have the ability to acquire lexically complex rules [or] new oppositions”. This would suggest that the reflexive *dV-* prefix and thus the reflexivity distinction may become lost in the Abui community of Takalelang over the next decades.

6 Conclusion

This case study of variation combined methods from descriptive linguistics, bilingualism research, and variationist sociolinguistics to investigate the causes and distribution of contact-induced variation in possession marking in an underdescribed type of bilingual speech community in Eastern Indonesia. It was shown how inflectional morphology is simplified due to limited language input and cross-linguistic influence. Age and gender are crucial variables in explaining the variation among the Abui-Malay bilingual groups. Younger bilinguals overgeneralize the default, non-reflexive possessive prefix *hV-* to reflexive contexts significantly more than older Abui speakers. In particular, (pre-) adolescent males could be the main drivers of the change, should this change grammaticalize. Our results lend support to the Missing Surface Inflectional Hypothesis, with comprehension data revealing that speakers still retain much knowledge of the reflexivity distinction but fail to produce the forms in production.

While showing that simplification is underway, this study has also laid the platform for future studies. Firstly, a follow-up panel study in at least eight years' time would enable us to answer the question of whether the currently observed variation will persist and lead to fully-fledged language change. Secondly, a follow-up to this study could involve the investigation of the alienability distinction which, alongside the reflexivity distinction, is also encoded in third person possessive prefixes. Comparing alienability and reflexivity, two features which Malay lacks, can offer valuable insights with regards to the vulnerability of possessive inflection referring to semantic noun classes vis-a-vis syntactic binding relations.

Abbreviations

AG = agentive, AL = alienable, DST = distal, GOAL = goal, SG = singular, PAT = patient, IPFV = imperfective, INAL = inalienable, LOC = locative, NONREFL = non-reflexive, PFV = perfective, POSS = possessive, PROG = progressive, REC = recipient inflectional paradigm, REFL = reflexive, SPC = specific demonstrative

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Competing Interests

The authors have no competing interests to declare.

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