

Deriving sluicing-like constructions in Isbukun Bunun

Hsiao-hung Iris Wu

National Taiwan Normal University

This paper investigates the sluicing-like constructions (SLCs) in Isbukun Bunun, a language which always places its *wh*-words at the left-peripheral position, and it is argued that genuine sluicing is not available in this language. The evidence in favor of the pseudo-sluicing analysis draws on the behavior of *how*-phrases, the failure of implicit discourse anaphoric arguments and the absence of sloppy identity reading in Isbukun SLCs. These properties are otherwise hard to accommodate in a movement and deletion approach but rather follow from the view that SLCs in Isbukun Bunun are derived from independent syntactic operations including *pro*-drop.

Keywords: sluicing, pseudo-sluicing, *wh*-formation, *pro*-drop, Isbukun Bunun

1. Setting the stage

Sluicing refers to the elliptical construction in which the sentential part of an interrogative clause is elided (or unpronounced) and only a *wh*-phrase overtly surfaces. As illustrated below, a sluicing construction like (1a) in most contexts can be taken as equivalent to (1b); thus, the hallmark of sluicing has been taken to denote the meaning of a constituent question with the form of merely an interrogative phrase.

- (1) a. Phoebe wants to eat something, but she doesn't know what.
- b. Phoebe wants to eat something, but she doesn't know what she wants to eat.

The phenomenon of sluicing has attracted considerable interest over the years because it represents an intriguing situation where, as Merchant (2012) puts it, the usual form-meaning mappings found in non-elliptical sentences break down. One major focus of discussion, among others, is the underlying structure of sluicing

or sluicing-like sentences. In particular, it has been commonly assumed that in sluicing the missing or deleted constituent is an IP/TP and the remnant *wh*-phrase is immune from ellipsis since it has either undergone *wh*-movement or been base-generated high in [Spec, CP]. Moreover, the ellipsis operation is possible only when the antecedent and the elliptical site bear certain identity; this identity may involve primarily semantic conditions (Merchant 2001; Culicover & Jackendoff 2005; Potsdam 2007), and sometimes a condition can be additionally invoked that requires either structural or lexical identity between the elided constituent and its antecedent, as argued for in a number of works (Fiengo & May 1994; Chung, Ladusaw & McCloskey 1995; Fox 2000; Chung 2006; Merchant 2008). On the other hand, there have been studies (cf. Merchant 1998; Fukaya & Hoji 1999; Hankamer 2011) pointing out that for some languages, such as Japanese and Turkish, the apparent sluicing constructions involve little or no clausal deletion at all of the English variety. Instead, the sluicing-like sentences might result from *it*-clefts, in which the expletive subject, copula, and cleft clause are made silent by some independently motivated mechanisms for non-pronunciation such as *pro*-drop. Following this line of research, therefore, it is fair to say that sentences whereby an interrogative clause is reduced to a mere phrase on the surface can be heterogeneous and derived from distinct origins. Therefore, an important question to ask when one looks at sluicing in a given language is to understand what and how much linguistic structure, if any, there is in the ellipsis site since languages can arrive at similar surface strings via the use of different syntactic strategies.

Another highly-connected issue is the correlation between the *wh*-question strategy and sluicing formation. As mentioned earlier, the movement of a *wh*-phrase seems to be a prerequisite for it to escape the elision operation and thus one would expect the availability of genuine sluicing to be predictable on the basis of its *wh*-syntax (cf. van Craenenbroeck & Lipták 2013). Hence, for instance, one might assume that sluicing does not exist in *wh*-in-situ languages since it will delete the entire constituent question, including the *wh*-phrase that does not raise out TP; however, the story turns out not to be so straightforward. A number of studies have pointed out it is nevertheless possible for the *wh*-phrase in a *wh*-in-situ language to arrive at some position outside of the elided TP by movement.¹ This possibility has been argued to hold in languages including Russian (Grebenyova 2007), Hungarian (van Craenenbroeck & Lipták 2006), Malagasy (Potsdam 2007), Farsi (Toosarvandani

1. As well-argued in Gribanova & Manetta (2016), for different *wh*-in-situ languages, the *wh*-phrase can escape the elision operation by discourse-motivated movement, EPP-triggered movement, *wh*-movement with exceptional PF properties or predicate-fronting movement. What they have in common is that the *wh*-remnant, which is otherwise in-situ, somehow gets dislocated from a clause which itself undergoes elision later.

2008), Romanian (Hoyt & Teodorescu 2012) and Hindi-Urdu (Gribanova & Manetta 2016). Thus, *wh*-in-situ languages have played an important role in the literature in testing the correspondence between the *wh*-syntax and the existence of genuine sluicing in a given language. On the other hand, if we think from the other end of the spectrum, one might presume that languages with *wh*-phrases obligatorily located at the left periphery would certainly instantiate genuine sluicing; however, this might not be the necessary conclusion to draw either.² Along this line, this study will explore this typological prediction by investigating the sluicing-like constructions (henceforth SLCs) in Isbukun Bunun, a language which always places its *wh*-words at the left-peripheral position, and will show that genuine sluicing is not available in this language. Instead, SLCs in Isbukun Bunun are derived from independent syntactic operations including *pro*-drop. If the data and analysis presented in this paper are on the right track, this study would have interesting implications on the relevant typological literature.

The paper is structured as follows. § 2 introduces some basic grammatical properties in Isbukun Bunun and shows that its *wh*-phrases are always placed at the leftmost position of the sentences. § 3 presents SLCs in Isbukun Bunun. Drawing on evidence of the peculiar behavior of *how*-phrases in SLCs, the failure of implicit correlates and the absence of sloppy identity reading, it is shown that SLCs in this language are not genuine sluicing. § 4 concludes the discussion.

2. Isbukun Bunun: Word order and question formation

Bunun is an endangered Formosan language spoken by the Bunun people in Taiwan; the data discussed in this study are based on the Isbukun dialect spoken mainly in Taitung County.³ Like most Western Austronesian languages, including other Formosan languages, Isbukun Bunun is a predicate-initial language and the sentence-initial predicate can take tense/aspect markers. It has two NP case markers. The nominative marker is *a*; for the remaining non-nominative NPs in the clause, the

2. Some previous works on other verb-first Austronesian languages have refuted such a presumption. For instance, Potsdam (2007) showed that Malagasy, in which subject *wh*-phrases must appear at the left edge of the clause, has pseudo-sluicing rather than sluicing. Thus, as far as the subject *wh*-phrases are concerned, his results argued against the hypothesized correlation of genuine sluicing and obligatory left positioning of interrogative phrases.

3. Isbukun is one of the five Bunun dialects and the other four are Takituduh, Takbanuaz, Takibakha, and Takivatan. Li (1988) provides a comparative study and describes the lexical and phonological differences among the five dialects. Unless otherwise noted, the data cited in this paper come from the author's own fieldwork notes.

oblique marker *mas* is used.⁴ As shown in (2), the case markers can be absent in fast speech and when not omitted, they immediately precede the marked NPs.

- (2) a. *ma-kulut Tahai lukis.*
 AV-cut Tahai tree
 'Tahai cuts trees.'
- b. *ma-zima a Dahu mas cici.*
 AV-like NOM Dahu OBL meat
 'Dahu likes meat.'

Moreover, similar to many Austronesian languages that display four-way distinction in their voice systems, Isbukun Bunun also distinguishes four different voice constructions: actor voice (AV, realized as *ma-*, *m-*, \emptyset), patient voice (PV, realized as *-un*), locative voice (LV, realized as *-an*) and instrumental/beneficiary voice (IV/BV realized as *is-*). In such a voice system, the subject of a clause, usually marked by the nominative case marker *a*, can be identified by the voice marking on the verb. For instance, in an AV-clause like (3a), the subject is the actor, whereas in a PV-clause like (3b) the nominative-marked subject is the patient.

- (3) a. *m<in>aun a Abus mas halup.*
 AV<PFV>eat NOM Abus OBL peach
 'Abus ate peaches.'
- b. *kaun-un-in mas Abus a halup-a.*
 eat-PV-PRF OBL Abus NOM peach-that.NOM
 'That peach has been eaten by Abus.'

Crucially, all the verbs in Isbukun Bunun must be encoded with their associated voice markers and the subject can bear any of a number of different argument relations to the verb. In this sense, the semantic role or grammatical function of the surface subject is obligatory to be registered on the verb.⁵

4. In Isbukun clause-level verbal case assignment, if a nominal expression has the grammatical function of subject, it is preceded by and marked with the nominative case *a*; otherwise, it is marked with the non-subject marker *mas* (Li 1997; Huang et al. 1999; H. Huang 2008; Shi 2009). It is important to note that the dichotomous formal case marking system, as adopted in this paper, does not necessarily mean a two-way distinction in function since the case marker for non-subject NPs may mark arguments or obliques.

5. See Guilfoyle, Hung & Travis (1992), Chang (1997), Aldridge (2004), Pearson (2005), Rackowski & Richards (2005) in the theoretical discussion of this marking. Various proposals on its nature have been made, including voice marking, focus marking or case morphology accounts. Although the details and functions of the voice marking system in Austronesian languages are still under debate, a common assumption in many formal accounts is that voice marking is a reflex of a functional head in the TP/vP domain agreeing with a particular argument (refer to

Next, let us look at the interrogative *wh*-constructions in this language. Examples are provided in (4).⁶

- (4) a. *sima ma-ludah Dahu?*
 who AV-hit Dahu
 ‘Who hits Dahu?’
- b. *maaz a saipuk-un-su sia lumah?*⁷
 what NOM raise-PV-2SG.OBL at home
 ‘What do you raise at home?’ = ‘What is raised by you at home?’
- c. *isa naia tunhabin?*
 where 3PL.NOM AV.hide
 ‘Where do they hide?’
- d. *lakua kasu ma-sabah?*
 when 2SG.NOM AV-sleep
 ‘When do you sleep?’
- e. *makua masnanava-a ma-snava uvaaz?*
 how teacher-that.NOM AV-teach children
 ‘How does the teacher teach the children?’
- f. *nii saikin haiap tu sima tusasaus.*
 NEG 1SG.NOM AV.know C who AV.sing
 ‘I don’t know who is singing.’

Rackowski 2002; Aldridge 2004, 2006; Pearson 2005; Rackowski & Richards 2005 for different instantiations of this assumption).

6. Discussion of *mavia* ‘why’ will be postponed till later in this section.

7. Like in many Austronesian languages (Chang 1997; Richards 2000; Rackowski 2002; Aldridge 2004; Pearson 2005), \bar{A} -extraction of nominal arguments in Isbukun, is restricted to the nominative-marked argument, often called the subject-only restriction (Keenan & Comrie 1977). Thus in (4b), the theme argument needs to be ‘promoted’ as the subject first, as reflected by the verbal morphology, so as to be further extracted. Note, however, that such a restriction does not apply to adjuncts; an adjunct can be fronted from a clause with a distinct subject in the clause (cf. (4c–e)). A number of languages such as Chamorro, Malagasy, Indonesian, and Māori have been shown to exhibit such an extraction asymmetry. For instance, in Chamorro when a higher adjunct forms an unbounded dependency, the higher verb does not show any *wh*-agreement (Chung 1998: 363–365). In Tagalog, adjuncts that are not subjects/external arguments can extract across a clause without any special morphology on the predicates of the intervening clauses (Kroeger 1992: 219–220). Isbukun behaves alike in this respect in that it allows adjuncts to undergo fronting without inducing change in verbal voice morphology. In other words, adjuncts, at least in some Austronesian languages, entertain a certain freedom in terms of extraction. More investigation into the argument-adjunct extraction asymmetry is surely needed (see Gärtner, Law & Sabel 2006 for some analytic possibilities).

As can be seen above, the interrogative *wh*-words in Isbukun obligatorily occur in the sentence-initial position. The *wh*-initial nature is observed in both matrix and embedded *wh*-questions. In the Austronesian literature it has been argued extensively that there is more than one syntactic path to *wh*-initial word order (Potsdam 2009). One obvious, and perhaps the most well-known, way is via overt *wh*-movement. Since *wh*-movement targets a left-periphery position, traditionally analyzed as [Spec, CP], a language with such an operation will yield *wh*-initial word order. Chamorro is argued to be such a *wh*-moving language in Chung (1998). Moreover, there are also other languages argued to exhibit overt movement of *wh*-phrases though not via the traditional English-type *wh*-movement. Instead, these languages are observed to have operations that move a *wh*-phrase to an informationally-specified, or focus, position. Seediq (Aldridge 2006) and Toba Batak (Hermon 2009) are suggested to be such languages that may focus-move their *wh*-phrases to an IP-internal position. Last but not least, *wh*-questions in a wide range of languages (Georgopoulos 1991 for Palauan; Tsai 1999 for Tsou; Paul 2000; Pearson 2001; Potsdam 2006 for Malagasy; Massam 2003 for Niuean among others) have been shown to take the form of (pseudo-)clefts.⁸ Briefly, the *wh*-word functions as the predicate and the remaining material as the subject in the form of a headless relative clause; since the *wh*-phrase is the main predicate of the clause, it will end up sentence-initially due to the verb-first nature of these languages. Given the multiple routes to *wh*-initial configurations, it has also been shown that a language might develop different strategies in forming different types of *wh*-questions. One oft-discussed possibility as argued in previous works is that argument and adjunct *wh*-questions may involve distinct structures. For instance, Aldridge (2002; 2004) argues that Tagalog argument questions are pseudocleft constructions whereas its adjunct questions are derived through overt movement. Along this line of research, in what follows I show that the *wh*-phrases in Isbukun do not undergo typical *wh*-movement and can be derived by more than one means.

Unlike a typical *wh*-word, the initial *wh*-word in Isbukun can be preceded by tense/aspect markers. For instance, the particle *na*, which signals that the event will take place in the future, must precede the predicate both in matrix and embedded clauses as shown in (5).

8. In the literature, clefting generally refers to constructions that put a particular constituent into contrastivity in the structure, including *it*-clefts and pseudoclefts. For several Austronesian languages it has been argued that cleft constructions are in fact concealed pseudoclefts (Georgopoulos 1991 for Palauan; Chung 1998 for Chamorro; Paul 2001, 2008 for Malagasy), in which a headless relative is in the subject position.

- (5) a. na ma-baliv saikin bunbun.
 FUT AV-buy 1SG.NOM banana
 'I am going to buy bananas.'
- b. Dahu hai miliskin [tu na ma-baliv lumah-cia].
 Dahu TOP AV.plan C FUT AV-buy house-that.OBL
 'Dahu plans to buy that house.'

Note especially that in embedded clauses *na* must follow the complementizer *tu*. Therefore it can be concluded that the tense/aspect marker *na* is generated in some position lower than *c*. Given this, now consider sentences in (6).

- (6) a. na sima ma-snava Dahu tusasaus?
 FUT who AV-teach Dahu AV.sing
 'Who will teach Dahu singing?'
- b. na maaz a tundaza-an-su kusia Taihuku?
 FUT what NOM take-LV-2SG.OBL AV.go Taipei
 'What will you take to go to Taipei?'
- c. na 'isa Dahu ma-baliv lailai?
 FUT where Dahu AV-buy car
 'Where will Dahu buy a car?'
- d. na lakua kasu mudaan?
 FUT when 2SG.NOM AV.leave
 'When will you leave?'
- e. na makua kasu ku-lumah?⁹
 FUT how 2SG.NOM AV.go-home
 'How will you go home?'

The examples in (6) show that *na* needs to precede these *wh*-phrases. Such distributions are unexpected under the classical *wh*-movement analysis. Precisely, if the *wh*-word were fronted to the clause-initial position by an operation akin to *wh*-movement in English-type languages, we would expect *na* to follow the *wh*-words; this is so since such moved *wh*-words are generally assumed to occupy [Spec, CP] and, as demonstrated earlier, *na* is lower than *c* and thus would be predicted to follow the *wh*-words instead. But this is clearly not the case empirically. We can thus say that these *wh*-words cannot be derived via traditional *wh*-movement. Nevertheless, in spite of this similarity, we can further distinguish Isbukun *wh*-questions into *wh*-argument (*sima*, *maaz*) questions and *wh*-adjunct (*lakua*, *isa*, *makua*) questions by at least two criteria.

9. *How*-questions will be discussed at greater length later in § 3.2.1.

First, with *wh*-argument questions, the pronominal clitic has to stay below and cannot be attached to the *wh*-word or the nominative marker *a* as in (7). However, clitics can raise high and get attached to the *wh*-adjunct as in (8):

- (7) a. *maaz-su a iliskin-un?
 what-2SG.OBL NOM think-PV
 Intended: 'What are you thinking?'
 b. *maaz a-su iliskin-un?
 what NOM-2SG.OBL think-PV
 Intended: 'What are you thinking?'
- (8) a. na lakua-ta ma-punahtung? (Huang & Shih 2016: 194)
 FUT when-1PL.NOM AV-meet
 'When shall we meet?'
 b. na makua-ta ma-'anat cici-tan?
 FUT how-1PL.NOM AV-cook meat-this
 'How do we cook the meat?'

Moreover, *wh*-arguments can be immediately followed by the nominative marker *a* while this is generally not the case with *wh*-adjuncts:

- (9) maaz a [saipuk-un-su sia lumah]?
 what NOM raise-PV-2SG.OBL at home
 'What do you raise at home?' = 'What is raised by you at home?'
- (10) *lakua-ta a maun mas haising?
 when-1PL.NOM NOM AV.eat OBL rice
 Intended: 'When are we eating?'

Based on these facts, I suggest that Isbukun *wh*-questions should be accommodated under different structures; in particular, for reasons laid out in the following, *wh*-argument questions are pseudocleft constructions (cf. Chang 2010), whereas adjunct questions are derived via overt fronting operation.

The structure proposed for *wh*-argument questions is represented in (11).

- (11) [_{IP} [_{predicate} *wh*-phrase] [_{NP/headless RC} [_{CP} Op_i [_{TP} ... t_i ...]]]]¹⁰

10. As mentioned in Footnote 7, extraction of arguments obeys the so-called subject-only restriction. Therefore, as diagrammed here, a null relative operator (Op) that corresponds to a nominative-marked argument is required in the headless relative. An analysis in the same spirit has been proposed by Georgopoulos (1991) for Palauan and by Potsdam (2007) for Malagasy. To simplify matters, in the following discussion, the existence of such a null operator and its precise derivational process within the headless relative clause will be put aside since it has no special role in the structure the current paper focuses on and there are already quite a number of works devoted to the pertinent issues. Readers can refer to Paul (2001), Potsdam (2006) for discussion.

In this view, the *wh*-argument question as a whole is syntactically realized as a pseudocleft structure: the *wh*-phrase is the predicate and the rest of the material, namely the constituent following the nominative marker *a*, should be analyzed as a headless relative clause, which serves as the subject of the sentence. In other words, the *wh*-argument appears at the clause-initial position simply on ground of being a predicate in a predicate-initial language. Evidence in support of such a view is based on the following criteria (cf. Potsdam & Polinsky 2011), according to which these Isbukun *wh*-questions can be shown to exhibit the syntactic properties of pseudoclefts, thus suggesting that they should share a common syntactic structure. First, the fact that Isbukun allows dummy heads in *wh*-argument questions supports the existence of a pseudocleft structure because typical *wh*-movement would not allow such a head to fill the gap position (see also Adger & Ramchand 2005); that is, it shows that the construction at stake involves predication.

- (12) a. *sima a ma-ludah mas Tahai (tu bunun)?*
 who NOM AV-hit OBL Tahai LNK person
 ‘Who is the person that hit Tahai?’
 b. *sima a kazima-un mas Tahai (tu bunun)?*
 who NOM like-PV OBL Tahai LNK person
 ‘Who is the person that is liked by Tahai?’

One more merit we can get from assuming the pseudocleft structure is that, under this account, the fact that *na* must precede the *wh*-word is well-expected since *na* must precede the predicate and the *wh*-argument is the matrix predicate.

In addition, one natural expectation that arises from the pseudocleft analysis of *wh*-constructions is that, all things being equal, Isbukun should independently allow the headless relative clauses to stand on their own in argument positions in declaratives. This expectation is met. As shown in (13), the headless relatives can stand as arguments, which might refer to a person or an object, just as in the *wh*-argument questions.

- (13) a. [_{pred} *Aping*] *a* [_{NP/headless RC} *ma-ludah mas Alang*].
 Aping NOM AV-hit OBL Alang
 ‘The one who hit Alang is *Aping*.’
 b. [_{pred} *cilas*] *a* [_{NP/headless RC} *baliv-un mas Tahai*].
 rice NOM buy-PV OBL Tahai
 ‘What Tahai bought is rice.’

These examples demonstrate that the headless relatives have the distribution of nominal expressions and, meanwhile, display nominal morphosyntax such as the ability to take case-marking appropriate for subjects. As is also revealed from the preceding examples, these *wh*-constructions and pseudoclefts in Isbukun exhibit

identical constituency configuration: both are formed by having a clausal-initial constituent which serves as the predicate and by allowing the nominative marker to immediately follow the initial element (which shows that the remainder of the clause is packaged as a syntactic subject). Compare (13) and (14) ((4b) and (6b) repeated as (14)).¹¹

- (14) a. *maaz a* [saipuk-un-su sia lumah]?
 what NOM raise-PV-2SG.OBL at home
 ‘What do you raise at home?’ = ‘What is raised by you at home?’
- b. *na maaz a* [tundaza-an-su kusia Taihuku]?
 FUT what NOM take-LV-2SG.OBL AV.go Taipei
 ‘What will you take to go to Taipei?’

Just as the nominative case *a* delimits the subject in (13), the same can be observed in (14) with *maaz* serving as the matrix predicate. More specifically, in line with Wu (2013), I assume that the basic verb-initial order in Isbukun is not base-generated but instead is derived as a result of phrasal predicate fronting to the specifier of IP from an underlying SVO order. That is, the predicate that surfaces at the left edge of the clause is actually a remnant XP that has raised to [Spec, IP], coupled with the object undergoing fronting to an intermediate functional projection to check its case features. In Isbukun, we can find that not only a verbal element is able to appear sentence-initially, but that it can also be a nominal element (*pasnanava* ‘student’ in (15a)) or an adpositional phrase (*kausia libus-cia* ‘to that forest’ in (15b)) that occupies this position.

- (15) a. *pasnanava a* Tahai.
 student NOM Tahai
 ‘Tahai is a student.’
- b. *kausia libus-cia a* Dahu.
 P.to forest-that.OBL NOM Dahu
 ‘Dahu is (going) to that forest.’

Following Wu (2013), I thus suggest that in pseudoclefts like (13) and (14) the matrix predicate arrives at the clausal-initial position via similar predicate fronting operation. As such, since predicate fronting is independently part of Isbukun grammar,

11. Zeitoun et al. (1999) argue that in Isbukun existential clauses (in which the existential verb is *aiza*) the non-occurrence of case marker *a* before the theme argument is due to vowel deletion for avoiding the sequence of two identical vowels (i.e. **aiza a*). Thus it seems that Isbukun has a phonological rule that bans on sequencing two identical vowels in this context. Since, among all the *wh*-words in Isbukun, only *maaz* ‘what’ does not end with the vowel *a*, in the examples provided here we only give clauses that involve *maaz* to demonstrate the possibility of having the nominative marker immediately following the *wh*-word.

this view provides an unstipulated, necessary account for the pseudocleft constructions, including the *wh*-argument questions.

On the other hand, *wh*-adjuncts do not seem to involve identical structure with *wh*-arguments as they display the two crucial properties described earlier which set them apart: *wh*-adjuncts are able to host clitic pronouns and they cannot be immediately followed by the nominative marker *a*. To account for these disparities, I suggest that Isbukun *wh*-adjuncts do not form pseudoclefts but, rather, undergo overt fronting operation, though shorter than traditional *wh*-movement.¹² This view can be empirically supported from several aspects. The first consequence which follows from this treatment is that *wh*-adjunct questions are considered mono-clausal and thus clitic pronouns are correctly predicted to be able to attach to the sentence-initial *wh*-adjuncts. In contrast, since *wh*-argument questions involve pseudoclefts, a *wh*-argument is expected not to be able to host the clitic given that it is not contained in the same clause where the clitic originates; once the clitic moves to attach to the *wh*-argument, it essentially moves out of a complex NP subject, thus inducing an island violation. Accordingly, the proposed separate deviations of the two types of *wh*-questions adequately capture the clitic placement facts. Moreover, since *wh*-adjunct questions do not involve pseudocleft configuration, a *wh*-adjunct is not immediately followed by the subject and therefore predicted not to immediately precede the nominative marker. Note further that, empirically, no *wh*-adjuncts are allowed to stay in-situ, so it is clear that they do undergo certain movement; crucially, however, as has been shown earlier, they must stay lower than the tense/aspect marker *na*, namely at least below c. Taken together, it seems reasonable to say that Isbukun *wh*-adjuncts undergo fronting operation, though not via the traditional *wh*-movement to the complementizer domain.

It may not have escaped the reader's notice that we have yet to say anything about the *wh*-word *why* in Isbukun. The reason for postponing the discussion of *mavia* 'why' is that it has distinct properties from the other types of *wh*-phrases discussed earlier, suggesting that it should be accommodated under yet another, different structure. Like other *wh*-words in Isbukun, *mavia* is obligatory to appear clause-initially (16a); however, it cannot be preceded by the future marker (16b). Moreover, in both matrix and embedded sentences, it must precede the

12. This kind of short fronting movement has been shown to exist in other Austronesian languages. For instance, Otsuka (2005) argues that Tongan has the scrambling-like operation that puts a phrase with information focus in the focus position [Spec, TP]. This movement is argued to be obligatory and licensed by two features on T: the EPP and information focus. Aldridge (2006), on the other hand, suggests that languages with predicate-fronting such as Seediq can use the *v*P edge as a focus position. Either alternative is compatible with Isbukun *wh*-adjuncts, and in the latter case, after the *wh*-adjunct reaches the *v*P edge, it will further move to specifier of IP to satisfy the clausal EPP requirement (cf. Wu 2013).

complementizer *tu* in (16a) and (16c). All these characterizing distributions are in blatant contrast to the other *wh*-words.

- (16) a. *mavia tu is-babaliv tulkuk mas Tahai?*
 why C BV-sell chicken OBL Tahai
 ‘Why did the chicken get sold by Tahai?’
 b. **na mavia kasu tu kusia Taihuku?* (cf. (7))
 FUT why 2SG.NOM C AV.go Taipei
 Intended: ‘Why are you going to Taipei?’
 c. *ma-singav saikin mas Dahu tu [mavia tu niang ku-lumah].*
 AV-ask 1SG.NOM OBL Dahu C why C NEG AV.go-home
 ‘I asked Dahu why he was not yet going home.’

Given this range of facts, I suggest that *mavia* is externally merged in a structurally high position, presumably into [Spec, CP] of the clause it modifies. This view is reminiscent of Rizzi’s (2001) and Ko’s (2005) analysis of *why* and is able to accommodate the distributional facts noted earlier in a straightforward manner: owing to its high merge position, it necessarily precedes the C⁰ head as well as tense/aspect markers.¹³

Summarizing, in this section I gave an introduction of some basic grammatical properties of Isbukun Bunun, including its voice system, word order and *wh*-questions. In particular, I suggested that Isbukun takes multiple routes to *wh*-initial configurations and, most important of all, it is shown that all *wh*-phrases in Isbukun Bunun are obligatory to occur in the sentence-initial position, no matter how they reach that left-peripheral position.

13. The *wh*-word *mavia* can host a nominative pronominal clitic (Huang & Shih 2016: 137):

- (i) *mavia=as ma-muhu tu?*
 why=2SG.NOM AV-tire Q
 ‘Why are you so tired?’

It is argued neatly in Li (2010) that short nominative clitic pronouns can be attached to initial hosts that are clearly phrasal such as temporal expressions. The contrast in (ii) shows that the nominative clitic needs to attach itself to the first syntactic phrase rather than the first word (Li 2010: 123):

- (ii) a. [*sangan cingmut*]=im l<in>*udan-an=mu.*
 AV:just morning=1PL.NOM <PFV>hit-LV=2PL.OBL
 ‘You hit us this morning.’
 b. **sangan=im cingmut l<in>udan-an=mu.*

Given this fact, the cliticization possibility in (i) is still compatible with our proposal that *mavia* be viewed as a phrase. I thank the editors for bringing my attention to the cliticization fact.

3. Deriving SLCs in Isbukun Bunun: A case of pseudo-sluicing

3.1 Data and analysis

Recall typical sluicing examples from English:

- (17) a. Somebody left but I don't know who.
 a'. Somebody left but I don't know who_i < t_i left >.
 b. Phoebe wants to eat something, but she doesn't know what.
 b'. Phoebe wants to eat something, but she doesn't know what_i < she wants to eat t_i >.

In genuine sluicing, it has been argued that the missing part (indicated by angle brackets in (17a') and (17b')) is derived by deleting a copy of a fully spelled-out constituent, which can find its correlate in the preceding linguistic context (see Ross 1967; Hankamer 1973; Sag 1980; Fox 1995; Merchant 2001; among many others).¹⁴ One crucial assumption underlying this view is that the *wh*-phrase is required to be located outside of the missing constituent, by, for instance, moving out of the ellipsis site prior to deletion.

Now consider the following examples which illustrate the SLCs in Isbukun.

- (18) aiza bunun tusasaus, haitu nii saikin haiap tu sima.
 exist person AV.sing but NEG 1SG.NOM AV.know C who
 'Someone is singing, but I don't know who.'
- (19) ma-sinav saia haimangsut, haitu nii saikin haiap tu maaz.
 AV-wash 3SG.NOM thing but NEG 1SG.NOM AV.know C what
 'He is washing something, but I don't know what.'
- (20) c<in>upa a Dahu tu na-minsuma saia, haitu nii tu
 AV<PFV>say NOM Dahu C FUT-come 3SG.NOM but NEG C
 haiap-un tu na lakua.
 know-PV C FUT when
 'Dahu said he will come, but it is not known when.'

14. Here I describe the widely-assumed PF deletion approach since it permits a reasonably simple presentation in a manner consistent with other current works. Another possible alternative is to say that the missing part has a base-generated empty structure, whose content is supplied by later rules of interpretation (LF copy approach, see Williams 1977; Chao 1987; Fiengo & May 1994; Chung, Ladusaw & McCloskey 1995, among others). Crucially, the two accounts both assume a full-fledged structure underlyingly with an elliptical sentence and our main point holds regardless of which approach one is committed to.

- (21) ta'aza saikin tu ma-baliv a Dahu mas lumah, haitu nii
 AV.hear 1SG.NOM C AV-buy NOM Dahu OBL house but NEG
 saikin haiap tu isa.
 1SG.NOM AV.know C where
 'I heard that Dahu bought a house, but I don't know where.'
- (22) Dahu hai ma-subnuh, haitu nii saikin haiap tu mavia.
 Dahu TOP AV-angry but NEG 1SG.NOM AV.know C why
 'Tahai is angry but I don't know why.'

As can be seen in these examples, Isbukun SLCs look similar to English-type sluicing in that the clausal sub-constituent of the embedded question is apparently missing, leaving only a stranded *wh*-phrase to surface. Given the similarity and given the fact that the *wh*-phrases in Isbukun always appear clause-initially, which sets the stage for deleting the non-*wh* part of the sentence, it seems rather straightforward if we apply the sluicing analysis to Isbukun SLCs. Under such a proposal, as represented in (23), the SLCs in Isbukun are viewed as involving deletion and the *wh*-phrase is immune to ellipsis by a general predicate-fronting mechanism that exists independently in this predicate-initial language.¹⁵ In essence, this account hypothesizes that predicate fronting occurs in embedded questions as well such that the *wh*-phrase fronts and then the remaining part deletes.

- (23) *Genuine sluicing analysis*
 [...*antecedent clause*].....[*wh*-phrase_i *t*_{TP}.....*t*_i.....]
 aiza bunun tusasaus, haitu nii saikin haiap tu
 exist person AV.sing but NEG 1SG.NOM AV.know C
 sima_i [[tusasaus] *t*_i]
 who
 'Someone is singing, but I don't know who.'

Despite appearances, nevertheless, I suggest that this analysis should be rejected and these SLCs are in fact not genuine sluicing of the English type; rather, the missing part in the sluicing construction does not arise from deletion but comes as a phonologically silent *pro*-form. The proposed structure is exemplified in (24), in which the apparent sluiced clause is composed of a silent pronominal subject and a *wh*-word (cf. Wei 2004; Adams & Tomioka 2012).

15. Or, in the case of *mavia* 'why', by its high merge position. In the following discussion, in order to highlight the major difference between the genuine sluicing analysis and pseudo-sluicing analysis, we temporarily leave *mavia* aside, though this expository decision does not affect our main point to be made here.

(24) *Pseudo-sluicing analysis*

[...*antecedent correlate*_k....]....[*wh-phrase pro*_k]
 aiza bunun_k tusasaus, haitu nii saikin haiap tu [sima *pro*_k].
 exist person AV.sing but NEG 1SG.NOM AV.know C who
 ‘Someone is singing, but I don’t know who.’

In other words, the pseudo-sluicing account treats the SLC to be akin to the construction in (25), except that in the case of (24), the pronominal element is void of any phonological content.

- (25) aiza bunun_k tusasaus, haitu nii saikin haiap tu
 exist person AV.sing but NEG 1SG.NOM AV.know C
 [sima saia_k].¹⁶
 who 3SG.NOM
 ‘Someone is singing, but I don’t know who that is.’

Clearly, there is one important feature in such a proposal, namely the possibility of having silent arguments in Isbukun Bunun, and this property is indeed independently attested in this language. Isbukun Bunun is a *pro*-drop language that allows its arguments, including but not limited to, subjects and objects, to be phonologically null, given appropriate discourse backgrounds. As shown in (26), Isbukun, which has neither subject nor object agreement, regularly allows *pro*-drop that can be recovered (or ‘licensed’) by the context (see also Wu 2009; Wei 2016).¹⁷

- (26) a. kusbai-in.
 AV.fly-PRF
 ‘(It) flew.’
 b. takna ma-saiv-in saikin sui.
 yesterday AV-give-PRF 1SG.NOM money
 ‘I gave (him/her) money yesterday.’
 c. A: ma-baliv naia lumah sia Taihuku.
 AV.buy 3PL.NOM house P Taipei
 ‘They bought a house in Taipei.’

16. *Saia* is the 3rd person singular pronoun and does not specify animate or gender distinction. Thus it can be taken to mean *that* (or *he/she* if it explicitly refers to a person).

17. A number of Austronesian languages have been argued to exhibit *pro*-drop (Polinsky & Potsdam, to appear). Ever since Rizzi (1982) and Huang (1984), it has been noted that *pro*-drop comes in various types; there are languages which have relatively rich agreement that permit *pro*-drop but also agreement-impoorished languages that allow *pro*-drop as well. It is not yet totally clear as to the correlation between the availability of *pro*-drop and the availability of agreement in the relevant literature. The licensing conditions on *pro*-drop thus still need to be further investigated (though see Neeleman & Szendrői 2007; Sato 2011; Wei 2016 for some possibilities).

B: ung, haiap-un-ku tu ma<i>baliv-in.
 Yes know-PV-1SG.OBL C AV<PFV>buy-PRF
 ‘Yes, I know that (they) bought (it).’

As a result, the assumption that the presence of silent *pro*-forms feeds Isbukun SLCs appears to be well-grounded in that the existence of *pro* is independently argued for so that this account does not need to postulate any extra specific rules for SLCs. Plainly, for an SLC that contains a *wh*-argument that serves as the main predicate, the subject argument is realized as a *pro*; when an SLC involves a *wh*-adjunct, its clausal complement consists of a null event *pro* subject. In the next section, we shall present more facts that further support this analysis; but before we proceed, it is important to note that the term ‘pseudo-sluicing’ should be regarded with caution. In the literature, the term ‘pseudo-sluicing’ has, unfortunately, received different construals: it is sometimes considered to involve a *wh*-remnant that is derived from an underlying reduced cleft structure, with the clause-like portion of the cleft being deleted (Merchant 1998), whereas in some studies, this term is only used in a broad sense to refer to constructions that superficially resemble sluicing but are actually *fake* or *counterfeit* sluicing (e.g. Adams & Tomioka 2012). The current discussion follows the latter practice; in other words, I do not take ‘pseudo-sluicing’ to be related to deletion operating on reduced clefts, but take it to generally refer to apparent sluicing-like sentences which should not be treated as genuine sluicing.

3.2 Arguments for the pseudo-sluicing analysis

The evidence in favor of the pseudo-sluicing analysis draws on three major aspects: the behavior of *how*-phrases, the failure of implicit discourse anaphoric arguments and the absence of sloppy identity reading in Isbukun SLCs.

3.2.1 Behavior of *how*-phrase

One important discrepancy between English sluicing and Isbukun SLC consists in the behavior of manner/method *wh*-phrases. While an English sluicing sentence with *how* is perfectly fine as (27), the counterpart of *how* in Isbukun, *makua*, is not permitted in the SLC as demonstrated in (28). This asymmetry comes as a surprise under the genuine sluicing account since *makua*, just like other *wh*-phrases, is required to appear to the left of the sentence (29), which in principle should set the clause up and enable the deletion process to succeed, contrary to the fact however.

(27) The magician opened the locked box but I don’t know how.

- (28) *na kusia saikin Tahuku, haitu nii saikin haiap tu
 FUT AV.go 1SG.NOM Taipei but NEG 1SG.NOM AV.know C
 na makua.
 FUT how
 'I am going to Taipei but I don't know how.'
- (29) nii saikin haiap tu na makua kusia Tahuku.
 NEG 1SG.NOM AV.know C FUT how AV.go Taipei
 'I don't know how to go to Taipei.'

In contrast, I suggest the distinctive behavior of *makua* follows from the current analysis in a straightforward way. Precisely, such an asymmetry arises since the *how*-phrase cannot be used in tandem with the pronoun and function as a manner-denoting predicate.¹⁸ This restriction is shown in (30): with an event-denoting pronoun, it is impossible to have *makua*, with the intended manner construal, predicated of this pronoun whereas there is no problem with other *wh*-phrases, for example, *sima* 'who' to appear in the same position.¹⁹ Note that the indicated unacceptability of

18. Note that *how* allows an ordinary non-pronominal DP as its subject as shown below, in which *how* is not manner-denoting but is used to denote (resultative) state/evaluation of a certain situation. In such cases, *makua* serves as the main predicate of the clause, in which the ordinary DP is the subject. I thank one anonymous reviewer for urging me to clarify this.

- (i) A: makua kasu?
 how 2SG.NOM
 'How are you?'
 B: ma-dahpa inak bungu.
 AV-ill 1SG.GEN head
 'I am having a headache.'
- (ii) A: makua isaicia laupaku sinihumis?
 How 3SG.GEN now life
 'How is his life now?'
 B: isaicia sinihumi hai, nii tu masial.
 3SG.GEN life TOP NEG C AV.good
 'His life is not good.'

19. Particularly interesting is that, as pointed out in Adams & Tomioka (2012), such a restriction can also be observed in other languages like English as well:

- (i) A: Someone robbed the bank on the corner.
 B: Who was that? / #How was that? [= What is your evaluation of the event?
 ≠ How did he rob the bank?]

In the literature it is unclear yet as to how this fact can be theoretically captured and we leave the proper account for further investigation. Additionally, one reviewer notes that, besides the reading indicated above, "How was that?" in B's reply is also felicitous in the meaning of "How did that happen?" I thank the reviewer for pointing this out.

makua ensues when *makua* is interpreted as referring to the manner with which a certain person burned the house, rather than interpreting as “the consequence or resultative state of the event”.

- (30) A: aiza bunun ma-pistaba lumah-cia.
 exist person AV-burn house-that.OBL
 ‘Someone burned the house.’
 B: sima/*makua saia?
 who/*how 3SG.NOM
 ‘Who/How was that?’

Given that it is unacceptable to have a sentence composed of a manner-denoting *makua* predicated of a pronoun subject in the first place, our pseudo-slucing analysis, which involves an interrogative phrase predicate with a null pronoun subject, correctly predicts the unavailability of manner-denoting *makua* in Isbukun SLCs.²⁰

3.2.2 *Implicit anaphoric arguments*

In English-type sluicing, it has been observed that the occurrence of an argument correlate in the antecedent clause can be optional, in particular, even when the *wh*-remnant is an argument (Merchant 2001). In other words, genuine sluicing tolerates its linguistic antecedent correlate to be implicit.

- (31) a. John is reading something, but we don’t know what.
 b. John is reading, but we don’t know what.

Crucially, however, in Isbukun it is impossible to have a sluicing-like sentence in which the antecedent correlate of a *wh*-argument remnant is missing. This is exemplified in (32).

- (32) *ma-sinav saia, haitu nii saikin haiap tu maaz.
 AV-wash 3SG.NOM but NEG 1SG.NOM AV.know C What
 ‘He is washing, but I don’t know what.’

20. In the same context as (30), speakers seem to show certain variation regarding their judgment of *lakua saia* ‘when (was) that’ as a possible answer. However, there are two important distinctions between the use of *lakua* and *makua* in such cases. First of all, speakers unanimously reject the use of *makua saia*, as indicated in (30) while some speakers find *lakua saia* acceptable. Thus speakers apparently differ in their degree of acceptance in the use of eventive pronouns, but for those who do accept such a usage they still differentiate between *lakua* and *makua* in this regard. More importantly, it is possible to have *lakua* alone as a reply in the case of (30B) but it is still implausible to have manner-denoting *makua* in this context. In other words, if we assume there is a covert subject pronoun in the structure, the aforementioned difference shows that it is possible to have *lakua*, but not *makua*, predicated of the subject *pro*. I thank one anonymous reviewer for noting the relevance.

Note that the unacceptability of (32) cannot be reduced to saying that there is selection problem of the verb *masinav* ‘wash’ in the antecedent clause so that it always needs to take an object overtly. This possibility can be easily excluded by the contrast given in (33): as long as the fully spelled-out structure is given in the second clause, the resulting sentence is perfectly fine, even when *masinav* ‘wash’ in the first clause obviously doesn’t take an overt object either just as (32).

- (33) ma-sinav saia, haitu nii saikin haiap tu maaz
 AV-wash 3SG.NOM but NEG 1SG.NOM AV.know C what
 saicia sinav-un.
 3SG.OBL wash-PV
 ‘He is washing, but I don’t know what is being washed by him.’

Under the genuine sluicing analysis, the unacceptability of (32) is unexpected since the occurrence of implicit arguments in the antecedent is generally permitted in English sluicing constructions like (31). Note in particular that the ill-formedness of (32) cannot be induced from the violation of (syntactic) identity condition either (Merchant 2001; Chung 2013). Identity condition refers to the idea that the ellipsis site must be identical, in some sense, to some preceding linguistic material in the discourse. That is, only when two clauses – antecedent and elided clauses – are structurally identical, could sluicing succeed. An explicit formulation of the strict syntactic identity condition on sluicing is provided by Potsdam (2007):

- (34) *Syntactic parallelism condition on IP ellipsis*
 An IP E can be deleted only if E is morpho-syntactically identical to an antecedent IP A at LF.

The most well-known evidence for the syntactic identity condition comes from the voice mismatch pattern observed with sluicing as illustrated in (35):

- (35) *Someone shot Bill, but I don’t know by who(m) ~~Bill was shot~~ *t*.

Patterns of this sort suggest that sluicing does not seem to tolerate voice mismatch, which calls for the need for syntactic parallelism in sluicing since it is clearly shown that semantic equivalence, which is satisfied here, does not warrant sluicing being efficaciously licensed. Granted this, it seems tempting to say that the earlier unacceptable Isbukun case of (32) arises from the problem of voice mismatch. Nevertheless, this reasoning cannot be sustained: as (36) shows, as long as the antecedent correlate, *haimangsut* ‘thing’ in this case, is overtly present, the resulting SLC is fine, even when this case involves voice mismatch as well.

- (36) ma-sinav saia haimangsut, haitu nii saikin haiap tu maaz.
 AV-wash 3SG.NOM thing but NEG 1SG.NOM AV.know C what
 ‘He is washing something, but I don’t know what.’

In other words, the ungrammaticality of (32) cannot be a consequence of voice mismatch between the antecedent and sluiced clause, but rather it shows that the antecedent correlate of a *wh*-argument remnant cannot go missing in Isbukun Bunun. This property is unanticipated under the view of genuine sluicing analysis.

On the other hand, the unacceptability of (32) is well-expected in the pseudo-sluicing account: since the works by Karttunen (1976), Kamp (1981) and Heim (1982), it has been noted that, for discourse anaphora,²¹ the pronoun needs to take its reference from the constructed linguistic context whereas an unexpressed argument is not sufficient for licensing the occurrence of a pronoun in the subsequent linguistic discourse. Such a requirement can be observed in the contrast of (37–38) (examples taken from Moltmann 2006):²²

- (37) a. #John is married. She is French.
b. John married someone. She is French.
- (38) a. #Mary was raped. But he was never found.
b. Someone raped Mary. He was never found.

Now, given that discourse anaphora requires an explicit linguistic antecedent and also that, under our proposal, what is involved in Isbukun SLCs is actually a phonologically silent pronoun, it follows that a missing antecedent correlate of a *wh*-argument remnant would cause a problem for the sentence in question since the pronoun cannot get proper assignment of its value from the linguistic discourse.

An anonymous reviewer pointed out one further possible prediction that should follow from the present discussion: implicit arguments in Isbukun cannot antecede a null pronoun outside of apparent sluicing constructions. The prediction is indeed borne out, as demonstrated in (39). (39) are unacceptable and it should be by now clear that their ungrammaticality arises since the implicit object argument fails to antecede the null subject of the second clause, for reasons laid out earlier. Therefore these patterns further strengthen the currently proposed view.

21. Note the difference between pragmatic anaphora (or indexicals) and discourse anaphora (Partee 2008, among others). Quite a few elements, including *he* and *she* in English, appear to have both deictic and anaphoric uses. For the pragmatic anaphora, it is possible to use *he* as in (i) while looking at someone who just walked by with no linguistic antecedent present. In contrast, the need for an explicit antecedent for a pronoun, as we discussed in this section and shown in (ii), is observed with discourse anaphora and such anaphora need to locate a linguistic antecedent in the preceding discourse.

- (i) *He* looks confused.
- (ii) A man walked in. *He* sat down.

22. A reviewer pointed out that it is possible to improve (37a) by changing it to be *John got married. She's French*. By changing the copula to the more dynamic *get*, the sentence appears to be felicitous again. It seems, therefore, that English facts are more complicated than what Moltmann (2006) portrays, which deserves further investigation.

The availability of sloppy identity readings has been considered a hallmark of ellipsis. Ross (1969) observes that sloppy readings are allowed in English sluicing sentences, as shown in (40). The second conjunct of (40) allows two interpretations: Bill knows how I should say I'm sorry (the strict reading) and Bill knows how Bill should say Bill is sorry (the sloppy reading).

- Ross (1967) also points out that for an elided expression to bear the sloppy identity, the pronoun relating to that particular reading must be c-commanded by its antecedent; this condition is satisfied in (40) (i.e. the missing pronoun in the second conjunct gets c-commanded by *Bill*). Although Merchant (2001), partially different from Ross (1969), notes that sloppy readings in English sluicing are not always accessible to some speakers but depend on certain conditions to be triggered, the crucial point for our purpose is that sloppy readings are *possible* in genuine sluicing and, in particular, they are usually available in sluicing sentences constructed with *wh*-adjuncts (Adams & Tomioka 2012).

Now the key point we want to show and emphasize in the following is that sloppy readings are *not possible* with Isbukun SLCs, no matter whether they involve *wh*-arguments or *wh*-adjuncts. The examples are given in (41) and (42).

- (41) haiap a Dahu tu sima sidangkaz saicia cina, haiap
 AV.know NOM Dahu C who AV.save 3SG.GEN mother AV.know
 amin Tahai tu sima.
 also Tahai C who
 ‘Dahu_i knows who saved his mother and Tahai_k also knows who (saved his_{i/*k}
 mother).’
- (42) sipungul a Dahu tu lakua saia kusian Takau, sipungul
 AV.forget NOM Dahu C when 3SG.NOM AV.go Kaohsiung AV.forget
 amin Tahai tu lakua.
 also Tahai C when
 ‘Dahu_i forgot when he_i went to Kaohsiung and Tahai_k also forgot when (he_{i/*k}
 went to Kaohsiung).’

As indicated above, the second conjuncts of the preceding examples only sanction the strict reading: (41) means Dahu and Tahai knows who saved Dahu's mother and (42) means that Dahu and Tahai forgot when Dahu went to Kaohsiung. The nonexistence of sloppy readings in such SLCs would be bewildering if elliptical operation were involved in these cases since the availability of sloppy interpretations is known to be characteristic of ellipsis. On the other hand, the fact that Isbukun SCLs only allow strict readings falls under the currently defended pseudo-slucing analysis. On this view, the apparent sluiced clause actually contains a covert pronominal subject (i.e. *pro*); moreover, as we said earlier, the silent *pro* needs to pick up its reference from its preceding linguistic context. For (41), the second conjunct would mean something like "Tahai also knows who that is" and the only available reference for such a pronoun to obtain is the specific person that saved Dahu's mother. In similar fashion, the second conjunct of (42) would mean "Tahai also forgot when that is" and the only possible interpretation for such a (silent) pronoun is referring to Dahu's trip to Kaohsiung. Accordingly, the interpretational facts also lend support to our pseudo-slucing analysis but cannot be readily captured under the genuine sluicing approach.

A number of clarificatory remarks are in order. First of all, the c-command requirement proposed by Ross (1967) is fulfilled in (41–42) so the absence of sloppy readings could not have stemmed from this consideration. Second, it is crucial to note if the counterparts of (41–42) are made to be fully spelled out without any element undergoing omission or deletion, the sloppy readings are in fact available. This is shown in (43–44).

- (43) haiap a Dahu tu sima sidangkaz saicia cina, haiap
 AV.know NOM Dahu C who AV.save 3SG.GEN mother AV.know
 amin Tahai tu sima sidangkaz saicia cina.
 also Tahai C who AV.save 3SG.GEN mother
 'Dahu_i knows who saved his_i mother and Tahai_k also knows who saved his_{i/k} mother.'

- (44) sipungul a Dahu tu lakua saia kusian Takau, sipungul
 AV.forget NOM Dahu C when 3SG.NOM AV.go Kaohsiung AV.forget
 amin Tahai tu lakua saia kusian Takau.
 also Tahai C when 3SG.NOM AV.go Kaohsiung
 'Dahu_i forgot when he_i went to Kaohsiung and Tahai_k also forgot when he_{i/k} went to Kaohsiung.'

Therefore, it is reasonable to deduce that the lack of sloppy readings should have resulted from the operation that creates the SLCs. More importantly, the unavailability of sloppy readings cannot be simply dismissed as some intrinsic property of Isbukun so that it lacks sloppy readings altogether in its grammar. In an English

VP-anaphora sentence, for instance like (45), a sloppy reading is available with the presence of *do so* such that the second clause of (45) has the reading where Bill asks his own girlfriend to the party.

(45) John asked his girlfriend to the party, and Bill did so, too.

Crucially, sloppy readings can also be observed with Isbukun sentences containing VP anaphora *do so*. For a sentence like (46), it means either Abus and Aping saw the same woman, i.e. Abus' mother (strict reading), or both of them saw their own respective mothers (sloppy reading).

(46) s<in>adu-in Abus isaicia cina, maupacia amin Aping.
 see<PFV>AV-PRF Abus 3SG.GEN mother AV.SO also Aping
 'Abus saw her mother and so did Aping.'

Taken together, if Isbukun SLCs were indeed a case of genuine ellipsis, it is curious why it would fail to instantiate the same basic ellipsis properties as are familiar and attested in ellipsis constructions of Isbukun and/or other languages.

The last possible concern to be addressed in the discussion of reading ambiguity is that some previous works (see especially Hoji 1998; Fukaya & Hoji 1999; Tomioka 1999) have suggested that the emergence of so-called sloppy readings might arise from some special pronoun properties of a given language but not necessarily come from the elliptical process. For instance, Tomioka (1999) examines certain sloppy identity cases where no variable binding obtains and provides an insightful account of focus and contrastiveness to capture the phenomenon. Nevertheless, this line of reasoning does not apply to the current case. If it were the intrinsic peculiar properties of Isbukun pronouns that lead to the rise of sloppy readings, we would expect (41) and (42) to behave on a par with (46) in their capability of generating relevant sloppy identity readings; yet, this is contrary to the fact. In other words, under the treatment of sloppy identity that resorts to pronoun idiosyncrasy, (41–42) and (46) are predicted to either both allow or both disallow the sloppy interpretations; however, as said earlier, SLCs in Isbukun never sanction sloppy readings, which is in stark contrast to cases like (46). Therefore we can say that the possible objection raised in the literature that links the availability of sloppy readings to the ellipsis mechanism does not hold water in the Isbukun case.

To recapitulate, in this section I have presented arguments favoring the pseudo-sluicing analysis of Isbukun SLCs, including the incompatibility of *how*-stranded phrases in the sluiced clauses, the required presence of explicit discourse anaphoric arguments and the absence of sloppy identity readings in Isbukun SLCs. Some possible concerns in rebuttal of such a treatment are also discussed and excluded.

4. Conclusion

This paper examined the sluicing-like sentences in Isbukun Bunun, a language whose *wh*-words always occur at the leftmost position, and showed that genuine sluicing is not available in this language. Instead, it was demonstrated that the apparent sluicing constructions involve no clausal deletion of the English variety but consist of a *wh*-phrase, serving as a predicate, and a *pro*-subject, which may refer to individuals or propositions present in the discourse. Such a pseudo-sluicing analysis was supported by a range of properties in Isbukun SLCs, which are otherwise difficult to accommodate in a movement and deletion approach.

Acknowledgements

I wish to thank Taupas Tansikian for his assistance and boundless patience for all these years. Special thanks are also due to the editors and three anonymous reviewers for their many helpful comments upon earlier drafts of this paper. All errors, empirical or conceptual, remain my own responsibility. This work was sponsored by the *Ministry of Science and Technology, Taiwan* (formerly *National Science Council*, NSC 102-2410-H-003-017-).

Abbreviations

AV	actor voice	OBL	oblique
BV	beneficiary voice	P	preposition
C	complementizer	PFV	perfective
FUT	future	PL	plural
GEN	genitive	PRF	perfect
IV	instrumental voice	PV	patient voice
LNK	linker	Q	question particle/ marker
LV	locational voice	SG	singular
NEG	negation, negative	SLCs	sluicing-like constructions
NOM	nominative	TOP	topic

References

Adams, Perng Wang & Tomioka, Satoshi. 2012. Sluicing in Mandarin Chinese: An instance of pseudo-sluicing. In Merchant, Jason & Simpson, Andrew (eds.), *Sluicing: Cross-linguistic perspectives*, 219–247. Oxford: Oxford University Press.
<https://doi.org/10.1093/acprof:oso/9780199645763.003.0010>

Adger, David & Ramchand, Gillian. 2005. Merge and move: *Wh*-dependencies revisited. *Linguistic Inquiry* 36(2). 161–193. <https://doi.org/10.1162/0024389053710729>

- Aldridge, Edith. 2002. Nominalization and *wh*-movement in Seediq and Tagalog. *Language and Linguistics* 3(2). 393–426.
- Aldridge, Edith. 2004. *Ergativity and word order in Austronesian languages*. Ithaca: Cornell University. (Doctoral dissertation.)
- Aldridge, Edith. 2006. The heterogeneity of VOS and extraction in Austronesian languages. Evanston: Northwestern University. (Manuscript.)
- Chang, Henry Y. 1997. *Voice, case and agreement in Seediq and Kavalan*. Hsinchu: National Tsing Hua University. (Doctoral dissertation.)
- Chang, Chung-yang Marco. 2010. *On the interrogative constructions in Isbukun Bunun*. Taipei: National Taiwan Normal University. (Master's thesis.)
- Chao, Wynn. 1987. *On ellipsis*. Amherst: University of Massachusetts at Amherst. (Doctoral dissertation.)
- Chung, Sandra. 1998. *The design of agreement: Evidence from Chamorro*. Chicago: University of Chicago Press.
- Chung, Sandra. 2006. Sluicing and the lexicon: The point of no return. In Cover, Rebecca T. & Kim, Yuni (eds.), *BLS 31: General session and parasession on prosodic variation and change*, 73–91. Berkeley: Berkeley Linguistics Society.
- Chung, Sandra. 2013. Syntactic identity in sluicing: How much and why. *Linguistic Inquiry* 44(1). 1–44. https://doi.org/10.1162/LING_a_00118
- Chung, Sandra & Ladusaw, William A. & McCloskey, James. 1995. Sluicing and logical form. *Natural Language Semantics* 3(3). 239–282. <https://doi.org/10.1007/BF01248819>
- Culicover, Peter W. & Jackendoff, Ray. 2005. *Simpler syntax*. Oxford: Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199271092.001.0001>
- Fiengo, Robert & May, Robert. 1994. *Indices and identity*. Cambridge: The MIT Press.
- Fox, Danny. 1995. Economy and scope. *Natural Language Semantics* 3(3). 283–341. <https://doi.org/10.1007/BF01248820>
- Fox, Danny. 2000. *Economy and semantic interpretation*. Cambridge: The MIT Press.
- Fukaya, Teruhiko & Hoji, Hajime. 1999. Stripping and sluicing in Japanese and some implications. In Bird, Sonya & Carnie, Andrew & Haugen, Jason D. & Norquest, Peter (eds.), *Proceedings of the 18th West Coast Conference on Formal Linguistics*, 145–158. Somerville: Cascadia Press.
- Gärtner, Hans-Martin & Law, Paul & Sabel, Joachim (eds.). 2006. *Clause structure and adjuncts in Austronesian languages*. Berlin: Mouton de Gruyter. <https://doi.org/10.1515/9783110922974>
- Georgopoulos, Carol. 1991. *Syntactic variables: Resumptive pronouns and A' binding in Palauan*. Dordrecht: Kluwer. <https://doi.org/10.1007/978-94-011-3202-2>
- Grebenyova, Lydia. 2007. Sluicing in Slavic. *Journal of Slavic Linguistics* 15(1). 49–80.
- Gribanova, Vera & Manetta, Emily. 2016. Ellipsis in *wh*-in-situ languages: Deriving apparent sluicing in Hindi-Urdu and Uzbek. *Linguistic Inquiry* 47(4). 631–668.
- Guilfoyle, Eithne & Hung, Henrietta & Travis, Lisa. 1992. Spec of IP and spec of VP: Two subjects in Austronesian languages. *Natural Language & Linguistic Theory* 10(3). 375–414. <https://doi.org/10.1007/BF00133368>
- Hankamer, Jorge. 1973. Why there are two *than*'s in English. In Corum, Claudia & Smith-Stark, T. Cedric & Weiser, Ann (eds.), *Papers from the Ninth Regional Meeting, Chicago Linguistic Society*, 179–191. Chicago: Chicago Linguistic Society.
- Hankamer, Jorge. 2011. Turkish pseudo-sluicing. (Paper presented at the 29th West Coast Conference on Formal Linguistics, Tucson, 22–24 April 2011.)
- Heim, Irene. 1982. *The semantics of definite and indefinite noun phrases*. Amherst: University of Massachusetts at Amherst. (Doctoral dissertation.)

- Hermón, Gabriella. 2009. Language typology and Universal Grammar: A commentary on the paper by Eric Potsdam. *Natural Language & Linguistic Theory* 27(4). 773–787. <https://doi.org/10.1007/s11049-009-9079-z>
- Hoji, Hajime. 1998. Null object and sloppy identity in Japanese. *Linguistic Inquiry* 29(1). 127–152. <https://doi.org/10.1162/002438998553680>
- Hoyt, Frederick & Teodorescu, Alexandra. 2012. How many kinds of sluicing, and why?: Single and multiple sluicing in Romanian, English and Japanese. In Merchant, Jason & Simpson, Andrew (eds.), *Sluicing: Cross-linguistic perspectives*, 83–103. Oxford: Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199645763.003.0005>
- Huang, C.-T. James. 1984. On the distribution and reference of empty pronouns. *Linguistic Inquiry* 15(4). 531–574.
- Huang, Hui-chuan J. 2008. Competition between syllabic and metrical constraints in two Bunun dialects. *Linguistics* 46(1). 1–32. <https://doi.org/10.1515/LING.2008.001>
- Huang, Hui-chuan J. & Shih, Chao-Kai. 2016. *Bunongyu yufa gailun* [An overview of Bunun grammar]. Taipei: Council of Indigenous Peoples.
- Huang, Lillian M. & Zeitoun, Elizabeth & Yeh, Marie M. & Chang, Anna H. & Wu, Joy J. 1999. A typological overview of pronominal systems of some Formosan languages. In Wang, H. Samuel & Tsao, Feng-fu & Lien, Chinfa (eds.), *Selected papers from the 5th International Conference on Chinese Linguistics*, 165–198. Taipei: Crane Publishing.
- Kamp, Hans. 1981. A theory of truth and semantic representation. In Groenendijk, Jeroen A. G. & Janssen, Theo M. V. & Stokhof, Martin B. J. (eds.), *Formal methods in the study of language: Mathematical centre tracts* 135, 277–322. Amsterdam: Mathematisch Centrum.
- Karttunen, Lauri. 1976. Discourse referents. In McCawley, James (ed.), *Syntax and semantics 7: Notes from the linguistic underground*, 363–385. New York: Academic Press.
- Keenan, Edward L. & Comrie, Bernard. 1977. Noun phrase accessibility and Universal Grammar. *Linguistic Inquiry* 8(1). 63–99.
- Ko, Heejeong. 2005. Syntax of why-in-situ: Merge into [Spec, CP] in the overt syntax. *Natural Language & Linguistic Theory* 23(4). 867–916. <https://doi.org/10.1007/s11049-004-5923-3>
- Kroeger, Paul. 1992. *Phrase structure and grammatical relations in Tagalog*. Stanford: CSLI Publications.
- Li, Lilian Li-ying. 2010. *Clitics in Nantou Isbukun Bunun (Austronesian)*. Nantou: National Chi Nan University. (Master's thesis.)
- Li, Paul Jen-kuei. 1988. A comparative study of Bunun dialects. *Bulletin of the Institute of History and Philology* 59(2). 479–508.
- Li, Paul Jen-kuei. 1997. A syntactic typology of Formosan Languages – case markers on nouns and pronouns. In Tseng, Chiu-yu (ed.), *Chinese languages and linguistics IV: Typological studies of languages in China*, 343–378. Taipei: Institute of History and Philology, Academia Sinica.
- Massam, Diane. 2003. Questions and the left periphery in Niuean. *Proceedings of the Ninth Annual Meeting of the Austronesia Formal Linguistics Association*, 94–106. Ithaca: Cornell Working Papers in Linguistics.
- Merchant, Jason. 1998. Pseudosluicing: Elliptical clefts in Japanese and English. In Alexiadou, Artemis & Fuhrhop, Nanna & Law, Paul & Kleinhenz, Ursula (eds.), *ZAS Working Papers in Linguistics* 10, 88–112. Berlin: Zentrum für Allgemeine Sprachwissenschaft.
- Merchant, Jason. 2001. *The syntax of silence: Sluicing, islands and the theory of ellipsis*. Oxford: Oxford University Press.
- Merchant, Jason. 2008. Variable island repair under ellipsis. In Johnson, Kyle (ed.), *Topics in ellipsis*, 132–153. Cambridge: Cambridge University Press.

- Merchant, Jason. 2012. *Ellipsis*. Chicago: University of Chicago. (Manuscript.)
- Moltmann, Friederike. 2006. Unbound anaphoric pronouns: E-Type, dynamic and structured-propositions approaches. *Synthese* 153(2). 199–260. <https://doi.org/10.1007/s11229-005-5469-x>
- Neeleman, Ad & Szendrői, Kriszta. 2007. Radical pro drop and the morphology of pronouns. *Linguistic Inquiry* 38(4). 671–714. <https://doi.org/10.1162/ling.2007.38.4.671>
- Otsuka, Yuko. 2005. Syntax and/or pragmatics: PP-scrambling in Tongan and the thematic hierarchy. In Heinz, Jeffrey & Ntelitheos, Dimitrios (eds.), *Proceedings of the Twelfth Annual Conference of AFLA*, 343–357. Los Angeles: UCLA.
- Partee, Barbara H. 2008. RGGU: Formal semantics and anaphora. Moscow: Russian State University for the Humanities. (Lecture notes.)
- Paul, Ileana M. 2000. *Malagasy clause structure*. Montreal: McGill University. (Doctoral dissertation.)
- Paul, Ileana. 2001. Concealed pseudo-clefts. *Lingua* 111(10). 707–727. [https://doi.org/10.1016/S0024-3841\(00\)00044-9](https://doi.org/10.1016/S0024-3841(00)00044-9)
- Paul, Ileana. 2008. On the topic of pseudoclefts. *Syntax* 11(1). 91–124. <https://doi.org/10.1111/j.1467-9612.2008.00104.x>
- Pearson, Matthew. 2001. *The clause structure of Malagasy: A minimalist approach*. Los Angeles: UCLA. (Doctoral dissertation.)
- Pearson, Matthew. 2005. The Malagasy subject/topic as an A'-element. *Natural Language & Linguistic Theory* 23(2). 381–457. <https://doi.org/10.1007/s11049-004-1582-7>
- Polinsky, Maria & Potsdam, Eric. To appear. Austronesian syntax. In Palmer, Bill (ed.), *Oceania*. Berlin: Mouton de Gruyter.
- Potsdam, Eric. 2006. More concealed pseudoclefts in Malagasy and the clausal typing hypothesis. *Lingua* 116(12). 2154–2182. <https://doi.org/10.1016/j.lingua.2005.07.003>
- Potsdam, Eric. 2007. Malagasy sluicing and its consequences for the identity requirement on ellipsis. *Natural Language & Linguistic Theory* 25(3). 577–613. <https://doi.org/10.1007/s11049-006-9015-4>
- Potsdam, Eric. 2009. Austronesian verb-Initial languages and *wh*-question strategies. *Natural Language & Linguistic Theory* 27(4). 737–771. <https://doi.org/10.1007/s11049-009-9078-0>
- Potsdam, Eric & Polinsky, Maria. 2011. Questions and word order in Polynesian. In Moyse-Faurie, Claire & Sabel, Joachim (eds.), *Topics in Oceanic morphosyntax*, 83–109. Berlin: Mouton de Gruyter. <https://doi.org/10.1515/9783110259919.107>
- Rackowski, Andrea. 2002. *The structure of Tagalog: Specificity, voice, and the distribution of arguments*. Cambridge: MIT. (Doctoral dissertation.)
- Rackowski, Andrea & Richards, Norvin. 2005. Phase edge and extraction: A Tagalog case study. *Linguistic Inquiry* 36(4). 565–599. <https://doi.org/10.1162/002438905774464368>
- Richards, Norvin. 2000. Another look at Tagalog subjects. In Paul, Ileana & Phillips, Vivianne & Travis, Lisa (eds.), *Formal issues in Austronesian linguistics*, 105–116. Dordrecht: Kluwer. https://doi.org/10.1007/978-94-017-1580-5_6
- Rizzi, Luigi. 1982. *Issues in Italian syntax*. Dordrecht: Foris. <https://doi.org/10.1515/9783110883718>
- Rizzi, Luigi. 2001. On the position “int(errogative)” in the left periphery of the clause. In Cinque, Guglielmo & Salvi, Giampaolo (eds.), *Current studies in Italian syntax: Essays offered to Lorenzo Renzi*, 267–296. Amsterdam: Elsevier.
- Ross, John Robert. 1967. *Constraints on variables in syntax*. Cambridge: MIT. (Doctoral dissertation.)
- Ross, John Robert. 1969. Guess who? In Binnick, Robert I. & Davidson, Alice & Green, Georgia M. & Morgan, Jerry L. (eds), *Papers from the Fifth Regional Meeting, Chicago Linguistic Society*, 252–286. Chicago: Chicago Linguistic Society.
- Sag, Ivan A. 1980. *Deletion and logical form*. New York: Garland.

- Sato, Yosuke. 2011. Radical pro drop and fusional pronominal morphology in colloquial Singapore English: Reply to Neeleman and Szendrői. *Linguistic Inquiry* 42(2). 356–365.
https://doi.org/10.1162/LING_a_00046
- Shi, Chaokai. 2009. *The linker tu in Isbukun Bunun*. Kaohsiung: National Kaohsiung Normal University. (Master's thesis.)
- Takahashi, Daiko. 1994. Sluicing in Japanese. *Journal of East Asian Linguistics* 3(3). 265–300.
<https://doi.org/10.1007/BF01733066>
- Tomioka, Satoshi. 1999. A sloppy identity puzzle. *Natural Language Semantics* 7(2). 217–241.
<https://doi.org/10.1023/A:1008309217917>
- Toosarvandani, Maziar. 2008. *Wh*-movement and the syntax of sluicing. *Journal of Linguistics* 44(3). 677–722.
- Tsai, Wei-Tien Dylan. 1999. On lexical courtesy. *Journal of East Asian Linguistics* 8(1). 39–73.
<https://doi.org/10.1023/A:1008354312243>
- Van Craenenbroeck, Jeroen & Lipták, Anikó. 2006. The cross-linguistic syntax of sluicing: Evidence from Hungarian relatives. *Syntax* 9(3). 248–274. <https://doi.org/10.1111/j.1467-9612.2006.00091.x>
- Van Craenenbroeck, Jeroen & Lipták, Anikó. 2013. What sluicing can do, what it can't and in which language: On the cross-linguistic syntax of ellipsis. In Cheng, Lisa Lai-Shen & Corver, Norbert (eds.), *Diagnosing syntax*, 502–536. Oxford: Oxford University Press.
<https://doi.org/10.1093/acprof:oso/9780199602490.003.0025>
- Wei, Ting-Chi. 2004. *Predication and sluicing in Mandarin Chinese*. Kaohsiung: National Kaohsiung Normal University. (Doctoral dissertation.)
- Wei, Ting-Chi. 2016. Argument-drop in Formosan languages: Pronominal morphology and discourse topic. *Tsing Hua Journal of Chinese Studies* 46(3). 561–625.
- Williams, Edwin S. 1977. Discourse and logical form. *Linguistic Inquiry* 8(1). 101–139.
- Wu, Hsiao-hung Iris. 2009. Existential constructions in Isbukun Bunun. *Oceanic Linguistics* 48(2). 364–378. <https://doi.org/10.1353/ol.0.0052>
- Wu, Hsiao-hung Iris. 2013. Verb initial order as predicate fronting in Isbukun Bunun. *Language and Linguistics* 14(3). 571–598.
- Zeitoun, Elizabeth & Huang, Lilian M. & Yeh, Marie M. & Chang, Anna H. 1999. Existential, possessive, and locative constructions in Formosan Languages. *Oceanic Linguistics* 38(1). 1–42.
<https://doi.org/10.2307/3623391>

Author's address

Hsiao-hung Iris Wu
 Department of English
 National Taiwan Normal University
 162, Heping East Road, Sec. 1
 Taipei City, 106
 Taiwan
iriswu@ntnu.edu.tw

Publication history

Date received: 18 January 2016

Date accepted: 4 July 2017