

Parallelism in Amis Sluicing*

Ting-Chi Wei

National Kaohsiung Normal University

This paper argues that the view from stricter syntactic parallelism fails to explain why sluicing in Amis can tolerate morphological and structural mismatches caused by argument structure alternations or pseudocleft/non-pseudocleft distinction as well as a violation of the generalization on preposition stranding (Merchant 2001). Building on these facts, we propose that all these mismatches can be captured by semantic isomorphism entertained by Merchant (2001), i.e. the Focus condition on IP-ellipsis with some extension to VP-ellipsis. Both conditions are incorporated to cope with the IP-ellipsis of the pseudocleft sluice and the VP-ellipsis of the serial verb sluice in Amis. Structurally, the whole sluice clause is unanimously topicalized in Amis before the ellipsis of IP or VP within the base-generated sluice interrogatives. Theoretically, Amis sluicing strictly adheres to the mutual entailment of e-GIVENness, while the eclectic lexico-syntactic approach adopted by Chung (2005a) is untenable.

Keywords: parallelism, sluicing, Amis, deletion

1. Introduction

Since Ross (1967) initiated the pioneering study on English elliptical structures, much effort has been devoted to the investigation of ellipsis in languages other than English with a focus not only on its distribution but also on its derivation. This paper is motivated by the fact that there are less studies on sluicing in Formosan languages than on other Austronesian languages. Therefore, in line with Potsdam (2007), we investigate sluicing in Central Amis,¹ in an attempt to see whether Amis sluicing should be dealt with *via* the notion of syntactic parallelism (Fiengo and May 1994 and others) or that of semantic parallelism (Dalrymple et al. 1991, Hardt 1999, Merchant 2001, among many others).

Linguistic materials can freely be left unpronounced only when they can be

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¹ According to Tsuchida's (1988) classification of Amis, there are five major dialects in this language: Sakizaya (or Sakiraya), Northern (or Nanshi Amis), Tavalong-Vataan, Central (Haian Amis and Hsiukulan Amis excluding Tavalong-Vataan), and Southern (Peinan Amis and Hengchun Amis). The data in this paper belongs to Hsiukulan Amis, a dialect of Central Amis, and was collected in the area of Alapawan, which crosses the three villages of Dunghe, including Taiyuan, Shangde, and Beiyuan within Taitung County. This dialect was chosen because it was well-protected and not influenced by other dialects owing to the basin landscape of the area. Though most of the data had been collected from the native speaker, Tian-lai Huang, from 2006 to 2009, crucial data was double checked with several natives of this area afterwards.

recovered by virtue of some linguistic clues. The antecedent clause generally plays a crucial role in recoverability: if a constituent *E* can be elided, its meaning must be recovered from its antecedent clause *A*. That is, the notion of parallelism is of significance in elliptical structures. In this work, we will try to demonstrate that sluicing in Amis depends on semantic parallelism rather than syntactic parallelism to license its ellipsis. Syntactic parallelism relies on strict morpho-syntactic identity between the elided constituent *E* and the antecedent *A* (Fiengo and May 1994 and Chung 2005a). In contrast, semantic parallelism demands that semantic representation be considered in the licensing of ellipsis *via* a particular semantic relation between the elided constituent *E* and the antecedent *A* (Schwarzschild 1999 and Merchant 2001).

Based on Potsdam's (2007) analysis, we will show that an analysis from stricter syntactic parallelism fails to explain why sluicing in Amis can tolerate morphological and structural mismatches caused by argument structure alternations or pseudocleft/non-pseudocleft distinction as well as a violation of preposition stranding generalization (Merchant 2001).² Building on these facts, we propose that all these mismatches can be captured under an incorporated Focus condition on IP/VP-ellipsis entertained by Merchant (2001) and Schwarzschild (1999), respectively, to cope with the IP-ellipsis of the pseudocleft sluice and the VP-ellipsis of the serial verb sluice in Amis. Structurally, the whole sluice clause is unanimously topicalized in Amis before the ellipsis of IP or VP within the base-generated sluice interrogatives. Theoretically, we find that Amis sluicing adheres to the mutual entailment of e-GIVENness, while the lexico-syntactic requirement proposed by Chung (2005a) is untenable.

The organization of this paper is as follows. Section 2 is devoted to a brief literature review on sluicing in Austronesian languages. Section 3 introduces Amis *wh*-interrogatives. Section 4 focuses on the distribution of Amis sluices. Section 5 analyzes the (syntactic) parallelism in Amis sluicing. Section 6 proposes a semantic parallelism approach. Section 7 concludes this work.

2. Studies on sluicing in Austronesian languages

There is little research on sluicing in the literature of the Austronesian languages. Most Austronesian linguists consider sluicing as a structure derived from pseudocleft sentences (Georgopoulos (1991) on Palauan, Cole et al. (to appear) on Malay, Chang (2000) on Tsou, Aldridge (2002) and Richards (1998) on Tagalog, Aldridge (2002) on Seediq, and Potsdam (2007) on Malagasy). That is, the *wh*-word will be located in the initial predicate position of the sentence, which is followed by a PF-deletion of the

² Note that in Potsdam's (2007) analysis, adjunct and verbal *wh*-remnants are not taken into account. We find that these two sets of *wh*-words differ from argument *wh*-remnants in Amis in many respects. Hence, this paper includes a wider variety of sluicing data than Potsdam (2007).

matrix subject. The initial *wh*-remnant is often thought of as being derived from predicate fronting rather than from *wh*-movement. Moreover, some languages even strictly select the types of *wh*-words that can appear in the pseudocleft structure. For example, Paul and Potsdam (2005) assert that only *wh*-elements in subject and adjunct positions can appear in Malagasy sluicing, while those in complement position are prohibited. The same complement-non-complement asymmetry also occurs in *wh*-questions, indicating that sluicing and *wh*-questions are closely related in Malagasy.³ More explicitly, Potsdam (2007) argues that sluicing in Malagasy is derived from a pseudocleft structure via predicate fronting, not *via wh*-movement. In the derivational process, the *wh*-questions are pseudoclefts with the *wh*-phrase contained in the main clause predicate and with the remaining material, a headless relative clause in subject position as in (1a). Then, the predicate (PredP) is fronted to a specifier position above IP, SpecFP, creating predicate-initial word order as in (1b) (Pearson 2001, Rackowski and Travis 2000, Travis 2006).⁴ Finally, IP deletion is implemented to yield sluicing as in (1c).

(1) Malagasy sluicing (Potsdam 2007:579-594)

- a. [DP/subject Op_i no ... t_i] [PredP *wh*-phrase]
 b. [FP [PredP *wh*-phrase] [F' F [IP [subject OP_i no ... t_i] [I' I t_{PredP}]]]]
 c. [FP [PredP *wh*-phrase] [F' F Ø]]

He further distinguishes cleft from pseudocleft by testing whether Malagasy tolerates pseudosluicing with empty subject and empty copula. It is finally concluded that Malagasy sluicing is a pseudocleft structure, not a cleft *per se*.

Kaufman and Paul (2006) divide sluicing in Tagalog into two types. DP *wh*-remnants are in the initial position of the pseudocleft, while non-DP *wh*-remnants are derived from *wh*-movement. After both *wh*-words are in initial position, deletion follows. In addition, Adams (2003) also classifies the derivation of sluicing in Javanese into two types, depending on the syntactic category of *wh*-elements. Non-PP adverbial *wh*-phrases need to undergo both *wh*-movement and focus movement to check off the strong features, [+*wh*] and [+*focus*]. Even though the other *wh*-phrases (NP and PP) are variables bound by a *wh*-operator that is base-generated in Spec of CP, they still need to move to check off the strong *focus*-feature. In other words, focus-movement is also triggered. In this way, the strong *focus*-feature motivates

³ Law (2007) argues against Paul's (2001) pseudocleft analysis on cleft and question in Malagasy to support Law's (2005) clausal complement analysis.

⁴ Potsdam (2007) also proposes that VXS order in Malagasy is derived from the original SVX order by means of Predicate fronting, which fronts PredP to a higher specifier position. In other words, SVO structure is changed into VOS *via* moving PredP to the [Spec, FP] above IP.

focus-movement that feeds IP ellipsis in Javanese.

So far, we can summarize that pseudocleft, *wh*-movement, focus-movement, and subject ellipsis/IP-ellipsis are the main devices normally used by Austronesian literature in dealing with sluicing. The use of the former three may depend on the type of *wh*-remnant. In contrast, Chung (2005a, 2005b) argues that sluicing in Chamorro actually uniformly results from the *wh*-movement and IP-deletion. There is no pseudocleft involved.

From the above descriptions, we can see that the real structure of sluicing depends on the unique properties of the language in question. There may not be a uniform way of analyzing sluicing (Merchant 2001). In other words, each language has its own way of expressing sluice, for example, *via* predicate-fronting and pseudocleft subject deletion in languages such as Malagasy (Paul and Potsdam 2005; Potsdam 2003, 2007), *via* pseudocleft subject deletion and base-generated *wh*-remnants in languages such as Tagalog (Kaufman and Paul 2006), or *via* focus-movement (Adams 2003, Javanese) and *wh*-movement (Kaufman and Paul 2006; Adams 2003; Chung 2005a, 2005b, Chamorro), followed by IP-ellipsis. On the basis of these studies on the Austronesian sluicing, we will analyze sluicing in Amis in an attempt to approach the derivational processes of the elliptical structure.

3. Amis *wh*-interrogatives

3.1 The simple clause structure

Amis makes use of two strategies to shape *wh*-questions. First, *wh*-argument can stay *in situ* either as a subject as in (2) or as a non-subject as in (3).⁵ This characteristic differs from Malagasy, which only tolerates the non-subject to stay *in situ*, similar to Seediq (Chang 1996), Kavalan (Li 1996), and Tsou (Chang 1998, 2000).

(2) *Wh*-argument *in situ* as subject⁶

- | | | | | |
|----|-------------------|---------|-----|-----------|
| a. | mi-sti'-ay | cima | ci | Kulas-an? |
| | AF-beat-FAC | who.NOM | PPN | Kulas-DAT |
| | 'Who beat Kulas?' | | | |

⁵ Liu (1999) and Liu (2003) have observed that the clause with Agent Voice can allow VSO and VOS, while the clause with Patient Voice can only tolerate VOS. In addition, Li (2008) also mentions that Amis prefers a different order of S and O for Agent-focused constructions or non-Agent-focused constructions. According to his examples, the former prefers VSO, and the latter VOS.

⁶ This paper follows the Leipzig Glossing Rules in glossing examples with the following additions or exceptions: AF, agent focus; PF, patient focus; IF, instrument focus; LF, location focus; ASP, aspectual marker; CN, common noun; EMP, emphasis marker; EX, existential verb; FAC, factual marker; LNK, linker; PPN, personal proper noun; DAT, dative case; RED, reduplication; TOP, topic marker.

- b. ma-sti'-ay ni Kulas cima?
 PF-beat-FAC GEN Kulas who.NOM
 'Whom did Kulas beat?'

(3) *Wh*-argument *in situ* as non-subject

- a. ma-sti'-ay nima ci Kulas?
 PF-beat-FAC who.GEN NOM Kulas
 'Who beat Kulas?'
- b. mi-sti'-ay ci Kulas cima-an?
 AF-beat-FAC NOM Kulas who-DAT
 'Whom did Kulas beat?'

Wh-adjuncts in Amis enjoy freedom in position. In (4), (i) *cima-an* 'where' can stay in the intermediate or initial position. Similarly, in (5), another *wh*-adjunct *i cuwa* 'where' can freely appear in intermediate positions and in the initial position with a linker *a* bridging between the *wh*-word and the following verb as in (5c). Interestingly, when *i cuwa* 'where' appears in final or intermediate position as in (5a, b), the factual marker *-ay*, which is supposed to attach to a predicate, is disallowed. In contrast, when it occurs in initial position, *-ay* can be naturally suffixed.⁷ It shows that the initial use of *i cuwa* is as a predicate, whereas the other uses are adverbials (Wei 2009). By the same token, the *wh*-adjunct *i hacuwa* 'when' denoting time manifests the same behavior in (6). So far, it is still too early to say where the exact base-generated position of these *wh*-adjuncts is. But one thing is for sure: *wh*-adjuncts in Amis can stay *in situ*, just like *wh*-arguments.⁸

- (4) a. ma-futi' kisu (i) cima-an?
 AF-sleep 2SG.NOM at who-DAT
 'At whose place did you sleep?'
- b. (i) cima-an kisu ma-futi'?
 at who-DAT 2SG.NOM AF-sleep
 'At whose place did you sleep?'

⁷ In the literature, *-ay* has been analyzed as an aspectual marker (He, et al. 1986 (in Chinese)), a nominalizer/aspectual marker (Lin 1995), an affix denoting past tense (Huang 2007), and a modal auxiliary denoting fact (factual marker, Wu 2003, 2006). Despite its simple distribution, usually attached with the verbal stem, the status of *-ay* is still under debate. For simplicity, we will take the affix as a factual important marker which can be used to test whether the stem it attaches to is a verbal element or not.

⁸ According to Chang (2006a, 2009), there are no real adverbials in some Formosan languages. Most of them are actually predicates. The term *adjunct* is merely used for the ease of categorization and description without involving any theoretical presupposition.

- (5) a. ma-lahuk kisu i cuwa-(*ay)?
 AF-eat.lunch 2SG.NOM at where-FAC
 ‘Where did you have lunch?’
- b. ma-lahuk i cuwa-(*ay) kisu?
 AF-eat.lunch at where-FAC 2SG.NOM
 ‘Where did you have lunch?’
- c. i cuwa-(ay) (a) ma-lahuk kisu?
 at where-FAC LNK AF-eat.lunch 2SG.NOM
 ‘Where did you have lunch?’
- (6) a. ma-lahuk-*(ay) kisu i hacuwa-(*ay)?
 AF-eat.lunch-FAC 2SG.NOM at when.FAC
 ‘When did you have lunch?’
- b. ma-lahuk-*(ay) i hacuwa-(*ay) kisu?
 AF-eat.lunch-FAC at when.FAC 2SG.NOM
 ‘When did you have lunch?’
- c. (i) hacuwa-ay (a) ma-lahuk kisu?
 at when-FAC LNK AF-eat.lunch 2SG.NOM
 ‘When did you have lunch?’

Uniquely, the *wh*-predicate *maan* ‘what’ (Huang et al. 1999) is only limited to initial position as in (7). No intermediate position is permitted. We assume that this is closely related to its predicative properties. Interestingly, this set is derived from the *wh*-nominal *maan* ‘what’ being able to affix with various kinds of voice marker.

- (7) a. mi-maan hatira kisu?
 AF-what such.that 2SG.NOM
 ‘Why did you do that?’
- b. ma-maan mi-’usi tu tilid?⁹
 RED-what AF-read ACC book
 ‘How about reading some books?’

⁹ One of the reviewers wonders why *ma-* in *ma-maan* is analyzed as a Ca reduplicant instead of a non-reduplicated prefix (i.e. an AP or PF marker). Upon checking, the reduplication marking was further confirmed by several informants. In addition, the dialect used in Ciwkangan has different reduplicating forms such as *man-ma’an* and *ma’a-ma’an* according to the National Taiwan University (NTU) Corpus of Formosa Languages. As for the representation of AF and PF, our data of Central Amis use *mi-maan* and *maan-en*, respectively.

3.2 The pseudocleft structure

The second strategy of forming *wh*-questions is by way of pseudocleft structure, just like some of the Austronesian languages reviewed previously. In (8), the initial *wh*-words in fact are originated from the grammatical subject position of the clause following *ku* under the Subject Sensitivity.¹⁰ On the surface, the *wh*-elements serve as predicates, which are predicated of the subjects, the clauses after *ku*.

- (8) a. (u) cima ku mi-sti'-ay ci Kulas-an?
 CN who NOM AF-beat-FAC PPN Kulas-DAT
 'Who is it that beat Kulas?'
 b. (u) cima ku ma-sti'-ay ni Kulas?
 CN who NOM PF-beat-FAC GEN Kulas
 'Who is it that was beaten by Kulas?'

Similarly, *wh*-adjuncts can also be used in pseudocleft as in (9), with an optional sequence, [*a* NP]. In (9a), we can postulate that there is a sequence composed of a linker *a* and PF nominal *kilang* 'tree' after the *wh*-word *i cuwa-(ay)*. In fact, the genuine subject within *ku*-clause is *kilang* 'tree', which can be omitted along with the linker *a*. Likewise, in (9b), *tuki* 'hour' is the grammatical subject of the *ku*-clause, denoting (the location of) the time.

- (9) a. i cuwa (a kilang) ku la-letek-en aku?¹¹
 at where LNK tree NOM RED-cut-PF 1SG.GEN
 'In which section of the tree is it that I should cut?'
 b. anu hakuwa (a tuki) ku ka-lahuk-an isu?
 IRR when LNK hour NOM KA-eat.lunch-LF 2SG.GEN
 'At what time is it that you have lunch?'

Despite the pervasiveness of pseudocleft in forming *wh*-questions, its derivation is still constrained by certain conditions in addition to the Subject Sensitivity Principle. First, the non-subject *wh*-words cannot occur within the pseudocleft clause as in (10). They have to be in initial positions; otherwise, the sentences will be ungrammatical. Here, we can postulate that (10) is not directly derived from sentences such as (2) and

¹⁰ Among the Austronesian languages, subject-sensitivity means that only grammatical subjects can be relativized, clefted, questioned, or topicalized (Keenan 1976, 1995, Keenan and Comrie 1977, MacLaughlin 1995, Paul 2000, 2001, 2002, Sabel 2002).

¹¹ This is a pseudocleft structure, in which the sequence *i cuwa (a kilang)* 'in which section of the tree' serves as a predicate. In that sense, the sequence is not an adjunct but a prepositional predicate.

(3), due to the fact that the latter two examples actually allow the *in situ* non-subject *wh*-words.¹²

- (10) a. * *ci* *Kulas* *ku* *mi-sti'-ay* *cima-an*?¹³
 PPN *Kulas* NOM AF-beat-FAC who-DAT
 ‘(Intended for) Who did *Kulas* beat?’
- b. * *ci* *Kulas* *ku* *mi-nengneng-ay* *tu* *maan*?
 PPN *Kulas* NOM AF-see-FAC ACC what
 ‘(Intended for) What did *Kulas* see?’

3.3 Ways to approach *wh*-questions in Amis

The focus of this section will be on the issue of how *wh*-questions are formally licensed, which is closely associated with the derivation of sluicing.

As a *wh-in-situ* language, an Amis *wh*-word in either the subject or non-subject position can stay *in situ* as shown in (2) and (3). Furthermore, its *wh*-construction can also be understood as a pseudocleft, just like Malagasy, as instantiated in (8a), and repeated here in (11a). We propose that the *wh*-word *cima* ‘who’ in initial position serves as a predicate, which is followed by a headless relative clause marked by the nominative marker *ku*. The headless relative clause is considered a subject of the sentence. Here, a question arises: In what way does the *wh*-word occur explicitly in the initial predicate position? Is it based-generated or derived from other sources such as predicate-fronting? Concerning this issue, Chang (1998, 2000), Liu (1999), Tsai (1997a, 2003), and Wei (2009) all adopt the base-generation analysis as illustrated in (11b). Along this vein, we will adopt the same analysis by claiming that the *wh*-word (*u*) *cima* ‘who’ is based-generated in predicate position with a headless relative as its subject. The relative clause is formed by an operator-variable chain implemented at LF, connecting the *wh*-remnant and the internal gap. Therefore, there will be no subjacency or island violation, as claimed by Chang (1998, 2000).

¹² The data may show that *wh-in-situ* elements obey island condition, because the interpretation of *wh*-phrases could be blocked by the headless relative clause at certain level of representation. In addition, such data could be ungrammatical because of the information structure. It is infelicitous to put old information in the focus position but keep new information *in situ*. Furthermore, it is found that not every *wh*-element can be used in the form of pseudocleft. Uniquely, the *wh*-predicates such as *maan* ‘what’ are prohibited in the pseudocleft structure. Thus, no pseudocleft counterparts of (7) can be found in our data.

¹³ We adopt the symbols used by Wu (2006) to mark the object nominal circumfixed by (*ci*)...*an*, such as *ci Kulas-an* and *cima-an*, as (PPN)...DAT for the reason that the suffix *an* also denotes location meaning in the sense of dative. In contrast, *tu* is purely an accusative case marker in front of nominal without (*ci*)...*an*.

- (11) a. (u) cima ku mi-sti'-ay ci Kulas-an?
 CN who NOM AF-beat-FAC PPN Kulas-DAT
 'Who is it that hit Kulas?'
 b. [[*wh*-remnant]_i ku [OP_i [Subject(grammatical subject) *x*_i]].

We propose that either the basic form or the pseudocleft form is interpreted respectively in terms of unselective binding (Li 1992, Aoun & Li 1993, Tsai 1994, 1997a, 1997b, among many others). In analogy to Tsou and Mandarin, the Q-operator in Amis is located in [Spec, CP], being bound with the *in-situ wh*-variable ($Wh(x)$). The natural consequence of this non-movement analysis is that there will be no island violations in Amis interrogatives, as demonstrated in (12). In (12a), the Complex Noun phrase, which contains the *wh*-word *hacuwa* 'when', is located in the predicate position; (12b) is a typical *Wh*-island. They both show that locality condition has no effect in Amis.

- (12) a. u [nu *hacuwa* a mi-paluma-an ni
 CN GEN when LNK MI-plant-PF GEN
 Panay a pawli] ku ka-ulah-an ni Kulas?
 Panay LNK banana NOM KA-like-PF GEN Kulas
 'What is the time *x* such that Kulas likes the bananas that Panay planted in *x*?'
 b. sa-ka-fana'-an nanay ci Kulas tu [[*maan* a
 SA-KA-know-AN want NOM Kulas ACC what LNK
 mi-'aca tu *cima* tu tilid] sanay]?¹⁴
 AF-buy ASP who.NOM ACC book such
 'Who is the person *x* such that Kulas wonders [why *x* bought books]?'

Given the unselective binding analysis, Amis is a *wh-in-situ* language in which *wh*-words are licensed without movement. Concerning the first strategy of the formation of the *wh*-question, the Q-operator in the [Spec, CP] can be bound with any *wh*-word in predicate, subject, or object position in (2-7), regardless of the categories of the *wh*-elements. It follows that the word order of Amis *wh*-questions, either VXS or VSX, is irrelevant, because the higher Q-operator is always higher than the predicate, arguments, and even adjuncts as shown in (13).

¹⁴ A reviewer has raised the question of why *sakafana'an nanay* 'want to know' is analyzed as two morphemes instead of one as suggested in Tsai and Tseng (1997). We find out that the second morpheme *nanay* is independently used to stress the meaning 'wish; want'. That is the reason why we adopt two-morpheme analysis. This may be caused by dialectal variation. Besides, in (12b), *maan* in the *wh*-island is a *wh*-predicate, meaning 'why'.

(13) [CP OP_i [FP...*wh*-word_i...]]

With regard to the second pseudocleft strategy, we assume that the predicate and subject of the pseudocleft structure are base-generated, since there is no evidence to prove that this pseudocleft structure (8-9) is derivationally related to the basic structure (2-7), and *vice versa*. The *wh*-words might be equal to the nominal predicates as in (8) or could be only a part of the nominal predicates as in (9). The subject, initiated by the nominative marker *ku*, is actually a headless relative with an operator *OP* in SpecCP, being co-indexed with the gap of the grammatical subject and further referring to the nominal predicate by virtue of strong binding, as illustrated in (14). Hence, the pseudocleft structure of a *wh*-question is in essence a simple predicate-initial structure made up of a complex subject and a (complex) predicate.

(14) [IP [nominal predicate]_i ku [NP [CP OP_i [... *x*_i (grammatical subject)]]]]

In brief, Amis sluicing, of which formation is pertinent to *wh*-questions, will surely be approached from the perspective of these two pervasive strategies. With these as background, let's now turn to sluicing in Amis.

3.4 Other essential structures relating to this analysis

This section will briefly introduce two sentence structures, topic structure and serial verb construction, pertinent to our analysis. The topic structure is generally used to stress the elements preceding the topic marker *i* as in (15) with a focus on *ira-ay ku tamdaw* (Tsai and Tseng 1997).

(15)	Ira-ay	ku	tamdaw	i,	itira	isawaran.
	EX-FAC	NOM	person	TOP	there	upstream
	‘There is someone there upstream.’					

The serial verb construction contains two verbs with a common argument, Agent. Between these verbs is an optional linker *a*, as manifested in the pattern VP-*a*-VP in (5c) and (6c).¹⁵

¹⁵ Given Chang's (2006b) four criteria of serial verb construction (SVC), the presence of the linker *a* here may exclude Amis from the list of SVC languages. But from other perspectives, the data here also obey the TAM (the same time frame) condition, the subordination condition, and the lexical verb condition. That is, they are still considered as a SVC in this work.

(5) c. i cuwa-(ay) (a) ma-lahuk kisu?
 at where-FAC LNK AF-eat.lunch 2SG.NOM
 ‘Where did you have lunch?’

(6) c. (i) hacuwa-ay (a) ma-lahuk kisu?
 at when-FAC LNK AF-eat.lunch 2SG.NOM
 ‘When did you have lunch?’

4. The distribution of Amis sluicing

We find that there are at least three types of sluicing in Amis, depending on the syntactic category and function of the *wh*-remnant, including the argument *wh*-remnant, verbal *wh*-remnant, and adverbial *wh*-remnant.

4.1 Argument *wh*-remnants

The first type of Amis sluicing is the argument *wh*-remnant type, whose nominal *wh*-remnant is to ask the “identity” of an overt/covert argument correlate in the first conjunct. For example, in (16a), the *wh*-remnant *cima* in the second conjunct inquires about the identity of the overt correlate *tamdaw* ‘person’ in the antecedent clause. In (16b), the correlate *maa-maan* is an indefinite reduplicated nominal, meaning ‘something’. By the same token, *wh*-remnant *maan* questions the identity of the overt correlate. Similar correlations can be found in (17), except for the complex *wh*-remnant *sa-maan-ay a tilid* ‘what book’ in (17a) and the NP-elided *wh*-remnant *nima (a rutu)* ‘whose bag’ in (17b).¹⁶

(16) a. ma-’araw-ay ni Kulas ku cima a *tamdaw*,
 PF-see-FAC GEN Kulas NOM who LNK person
 ka anu *u* *cima* i, cuwa ka-fana’¹⁷
 but IRR CN who TOP NEG KA-know
 kaku.
 1SG.NOM
 ‘Kulas saw someone, but I don’t know who.’

¹⁶ A reviewer suggests that verb types other than *fana’* ‘know’ should be checked to substantiate our analysis. In general, the second conjunct of sluicing contains a matrix verb which can take indirect *wh*-question as its complement. Here, for simplicity, we merely use the typical verb *fana’* to check Amis sluicing.

¹⁷ According to the informants, the connective *ka:* has to be lengthened to be a coordinator. Besides, when *cima* is pronounced as *ci:ma*, it is an indefinite use. For the ease of typing, the lengthening symbol is omitted.

b. mi-'aca-ay ci Kulas tu *ma-maan*, ka
 AF-buy-FAC NOM Kulas ACC RED-what but
 anu *u* *maan* i, cuwa ka-fana' kaku.
 IRR CN what TOP NEG KA-know 1SG.NOM
 'Kulas bought something, but I don't know what.'

(17) a. mi-'aca-ay ci Kulas tu *tilid*, ka anu
 AF-buy-FAC NOM Kulas ACC book but IRR
u *sa-maan-ay* *a* *tilid* i, cuwa ka-fana'
 CN SA-what-FAC LNK book TOP NEG KA-know
 kaku.
 1SG.NOM

'Kulas bought a book, but I don't know what book.'

b. ma-letep-ay ni Kulas ku *rutu*, ka anu *u*
 PF-pick-FAC GEN Kulas NOM bag but IRR CN
nima (a *rutu*) i, cuwa ka-fana' kaku.
 whose LNK bag TOP NEG KA-know 1SG.NOM
 'Kulas picked up a bag, but I don't know whose (bag).'

The examples in (18) indicate that the argument *wh*-remnants can also refer to the implicit correlates. Note that (18a, b) are existential sentences, in which the associated antecedents are implied under existential expressions such as *ira-ay*.

(18) a. *ira-ay* ku *mi-usi-ay* tu *tilid*, ka
 EX-FAC NOM AF-read-FAC ACC book but
 anu *u* *cima* i, cuwa ka-fana' kaku.
 IRR CN who TOP NEG KA-know 1SG.NOM
 'Someone is reading, but I don't know who.'

b. *ira-ay* ku *tayni-ay* (a *tamdaw*), ka
 EX-FAC NOM AF.come-FAC LNK person but
 anu *u* *cima* i, cuwa ka-fana' kaku.
 IRR CN who TOP NEG KA-know 1SG.NOM
 'Someone is coming, but I don't know who.'

Obviously, sluicing in Amis has to be uniformly formed by topicalizing the *wh*-sluice to the initial position of the second conjunct, for the *wh*-remnants are always followed by a topic marker *i*. Conceptually speaking, it may be contradictory to say that the topicalized element, which is supposed to convey old information,

contains a *wh*-remnant, which should represent new information. However, the part preceding *i* is not really new information as it has been mentioned in the preceding clause in sluicing. In that sense, the topic analysis is tenable. What is more, the *wh*-remnant is always preceded by an irrealis marker *anu* along with a common noun marker *u* in front of the nominal *wh*-remnant.¹⁸

4.2 Verbal *wh*-remnants

The second type of Amis sluicing is drastically different from the first type with respect to its result and cause reading.¹⁹ In (19a, b, c), the *wh*-remnants, *sa-maan-ay* ‘how’, *ma-sa-maan-ay* ‘how’, and *ma-kna-ay* ‘how’, respectively, are verbal predicates due to the fact that they can be attached with the prefix *ma-* and *sa-* and suffix *ay*. Semantically, this *how*-type of *wh*-remnant is concerned with the result of the exam and hunting in (19a, b), respectively, and with the cause of the event in the first conjunct as in (19c). The correlates of these *wh*-remnants are actually covertly realized as the peripheral arguments of the target event, which are related to result or cause, not the manner or instrument of the previous event.²⁰ Similar to (16-18), the sentences in (19) also undergo topicalization, which raises the whole sluice to the initial position of the second conjunct and ends up with the marker *i*. In addition, the irrealis marker *anu* is also required.

¹⁸ Henry Y. Chang (p.c.) questioned the function of the irrealis marker *anu*. It is observed that its function and meaning usually varies with the structure, ranging from possibility to conjecture. It appears in front of the non-past time such as *anu hatini* ‘now’ and *anu papacem* ‘tomorrow’ and initiates a conditional sentence, meaning ‘if’.

¹⁹ One of the reviewers questions the necessity of distinguishing the verbal *wh*-remnants in 4.2 from peripheral adverbial *wh*-predicates in 4.3, since both belong to the type of adjunct. Here, we would like to say that this distinction is still necessary for two reasons. First, verbal *wh*-remnants always initiate a sentence, while the adverbial *wh*-predicates may be floating in the initial, medial, or even final position. That is one of the reasons why some linguists such as Wu (2000) and Wei (2009) take the former as a verbal *wh*-element, in contrast to the latter. Second, as will be shown in Section 5, this essential difference brings about different effects on parallelism.

²⁰ The behavior is similar to that of English and Mandarin Chinese. The use of the manner *how* is generally prohibited in sluicing.

- (i) *John walks to school, but I don’t know how.
- (ii) *Zhangsan hui qu meiguo, dan wo bu zhidao (*shi*)
 Zhangsan will go U.S. but I not know be
 zenme(yang). (causal/method)
 how
 ‘Zhangsan will go to the United States, but I don’t know how come/how.’

- (19) a. ma-harek-ay tu mi-siking ci Kulas, ka anu
 AF-finish-FAC ASP AF-exam NOM Kulas but IRR
 sa-maan-ay i, cuwa ka-fana' kaku.
 SA-what-FAC TOP NEG KA-know 1SG.NOM
 'Kulas has finished the exam, but I don't know what the result is.'
- b. mi-'adup-ay tala-tukus ci Kulas, ka anu
 AF-hunt-FAC AF.go-mountain NOM Kulas but IRR
 ma-sa-maan-ay tu i, cuwa ka-fana' kaku.²¹
 MA-SA-what-FAC ASP TOP NEG KA-know 1SG.NOM
 'Kulas went hunting in the mountains, but I don't know how.'
- c. awa-ay tayni ci Kulas, ka anu ma-kna-ay
 NEG-FAC AF.come NOM Kulas but IRR MA-how-FAC
 i, cuwa ka-fana' kaku.
 TOP NEG KA-know 1SG.NOM
 'Kulas didn't come, but I don't know why.'²²

4.3 Adverbial *wh*-remnants

The third type of sluicing in Amis is characterized by covert/overt correlates and the adjunct *wh*-remnants, the latter of which functionally serve as predicates and semantically as a peripheral argument of the event in the first conjunct under Davidsonian's event structure (Davidson 1967). The *wh*-remnants in front of the sluice clause are adverbial *wh*-words, such as *i cuwa-ay* 'where', *hacuwa* 'when', and *hatu cima* 'with whom' as in (20a, b, c) respectively. It is worthwhile noting that the correlates of this type are optional in (20a, b) but obligatory in (20c). In the former, the *wh*-remnants do not require overt corresponding correlates in the first conjunct, whereas the one in the latter does.

²¹ The *ma-* in *ma-sa-maan-ay* in (19b) and *ma-kna-ay* in (19c) will be glossed as MA because we do not have enough morpho-syntactic evidence to say that it should be represented either a PF marker or an AF marker. In addition, we thank one reviewer for pointing out the mistake that *tala tukus* 'go mountain-climbing' should be treated as a compound, *tala-tukus*. Furthermore, the reviewer suggests that the sequence *mi-'adup-ay tala-tukus* could be replaced with *tala-tukus-ay mi-'adup* 'go hunting in the mountains.' The informants view either expression as acceptable but with a difference on focus. The former is on hunting and the latter on mountain-climbing.

²² This example has another expression which retains the negation after the *wh*-remnant.

- (i) awa-ay tayni ci Kulas, ka u maan ku ka-awa
 NEG-FAC AF.come NOM Kulas but CN what NOM KA-NEG
 ira [a—~~tayni~~] i, cuwa ka-fana' kaku.
 3SGGEN LNK AF.come TOP NEG KA-know 1SGNOM
 '(lit.) Kulas didn't come, but I don't know why he didn't.'

- (20) a. mi-'aca-ay ci Kulas tu luma', ka anu
 AF-buy-FAC NOM Kulas ACC house but IRR
i *cuwa-ay* i, cuwa ka-fana' kaku.
 at where-FAC TOP NEG KA-know 1SG.NOM
 'Kulas bought a house, but I don't know where.'
- b. pa-'aliwac tu kita, ka anu (*i*)
 CAUS-take.off ASP 1PL.INCL.NOM but IRR at
hacuwa tu i, cuwa ka-fana' kaku.
 when ASP TOP NEG KA-know 1SG.NOM
 'We can take several days off, but I don't know when.'
- c. ma-lahuk-ay *(hatu cima) ci Kulas, ka (*anu*)
 AF-eat.lunch-FAC with who NOM Kulas but IRR
hatu *cima* i, cuwa ka-fana' kaku.²³
 with who TOP NEG KA-know 1SG.NOM
 'Kulas had lunch with someone, but I don't know with whom.'

As illustrated in (5c), only when *i cuwa-ay* is placed in the initial position of a clause can it be suffixed with *ay*. Thus, it follows that the *wh*-remnant in (20a) functions as a predicate and denotes the inquiry of the place of the correlative event. In analogy, as shown in (6c), *hacuwa* 'where' in (20b) is in predicate position with preposition *i* optionally omitted or even with *-ay* attached when the factual meaning is required. However, the prepositional *hatu cima* 'with whom' requires an overt equivalent correlate as in (20c), denoting the comitative meaning. When the correlate is omitted, the sentence is not grammatical.²⁴ The topic marker *i* of this type and the irrealis marker *anu* are also required in the second conjunct.

²³ In this dialect, *hatu* or *atu* can be ambiguously defined as a conjunctive or a preposition. In this case, it is much closer to the prepositional use because *hatu cima* can independently appear in the second conjunct. In that sense, even if it is possible to consider *hatu-cima* as a verbal compound, as a reviewer suggests, the ambiguous status of *hatu* still reveals that the integrity of the compound is quite weak. This understanding of *hatu* may help us to answer the questions such as why *hatu cima* requires an overt correlate and why (*i*) *hacuwa* 'when' and *i cuwa-ay* 'where' can tolerate covert correlates. It is because even though the comitative use of *hatu cima* is used as an adjunct-like element, grammatically, it is a combination of a preposition and a noun, which means that it also contains an argument-like element. Thus, its antecedent, also an argument, is required to be overt. In contrast, semantically, the other two *wh*-words are truly adjuncts, which can refer to the implicit peripheral argument in the first conjunct.

²⁴ According to Tian-lai Huang's intuition (p.c.), covert correlate can be allowed in predicates which implicitly require two agents, such as 'udut' 'fight'. Obviously, the prohibition of implicit correlate is different from the similar case in English or in Mandarin Chinese. We will discuss its effect on prepositional stranding in Section 5.2.3.

5. Parallelism in Amis sluicing

Since the exact formulation of the parallelism is still a controversial issue, we will review the notion of the strict syntactic parallelism, entertained by Fox and Lasnik (2003), Fiengo and May (1994, 1998), Chung, Ladusaw, and McCloskey (1995), among others, and then go to the semantic parallelism defended by Merchant (2001). Finally, an eclectic way which tolerates both the lexico-syntactic requirement of the former and the semantic entailment of the latter (Chung 2005a) will be taken into account.

5.1 Theories of parallelism

5.1.1 Syntactic parallelism

According to Potsdam (2007), syntactic parallelism is defined and instantiated as in (21) and (22), respectively in line with Fox and Lasnik (2003), Fiengo and May (1994, 1998), Chung, Ladusaw, and McCloskey (1995), among many others.

(21) 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.

(22) John saw someone, but I don't know [_{CP} who_i [~~John saw t_i]].~~

a. antecedent clause: [_A John saw *x*]

b. sluiced clause: [I don't know [_{CP} who *x* [_E ~~John saw *x*~~]]]

In (22a), the indefinite correlate is interpreted as a variable in the antecedent clause, which is bound by an existential operator. In (22b), the *wh*-movement of *who* also leaves a variable in the elided clause. The two clauses are identical in structure, so that the IP-deletion is licensed.

5.1.2 Semantic parallelism

Merchant (2001) has strongly argued that only analysis based on semantic parallelism rather than on syntactic parallelism can successfully explain ellipsis in sluicing. He proposes that under the Focus condition on IP-ellipsis (23), which is built on the notion of e-GIVENness (24), (25) can be formally represented as in (26).

(23) Focus condition on IP-ellipsis

An IP α can be deleted only if α is e-GIVEN.

(24) e-GIVENness

An expression E counts as e-GIVEN iff E has a salient antecedent A and, modulo \exists -type shifting, (a) A entails F-clo(E), and (b) E entails F-clo(A).

(25) She loves someone, but I don't know who.

(26) a. $IP_A' = \exists x$ [she loves x], F-clo(IP_E) = $\exists x$ [she loves x]²⁵

b. $IP_E' = \exists x$ [she loves x], F-clo(IP_A) = $\exists x$ [she loves x]

The first conjunct in (25) introduces the proposition in (26a) ($IP_A' = \exists x$ [she loves x]), while the F-closure of the deleted IP in the second conjunct, assuming reconstruction of the content of the missing argument x , will be represented as a proposition (F-clo(IP_E) = $\exists x$ [she loves x]). In this case, IP_A' semantically entails F-clo(IP_E). By the same token, the reverse entailment relation holds as well, since IP_E' entails F-clo(IP_A) in (26b). It means that the mutual entailment between the antecedent clause and the sluice clause makes the target IP become an e-GIVENness expression according to (24). Therefore, the focus condition on IP-deletion (23) is satisfied in (25), validating the IP deletion.

5.1.3 An eclectic approach to parallelism

In fact, in terms of parallelism, the PF-deletion analysis requires that every lexical item in the elided IP must be identical to an item in the correlate clause. This idea has been elaborated by Chung (2005a) from the Minimalist notion of numeration. Chung argues that the deletion cannot be “merely” constrained by semantic (entailment) conditions alone (Merchant 2001), requiring the nonfocused portions of the antecedent IP and the elided IP to entail each other, mostly because they fail to rule out the prepositional stranding in sluicing as follows.²⁶

(27) a. They're jealous, but it's unclear *of who*.

b. *They're jealous, but it's unclear *who*.

²⁵ The symbol α' stands for the result of applying \exists -type shifting to α .

²⁶ Merchant (2009) admits that some “hybrid theories”, incorporating both semantic and syntactic identity conditions, are needed to deal with data amenable to a semantic and syntactic treatment, respectively.

She further claims that “the choice between pied-piping and preposition stranding is not normally thought to have semantic (true-conditional) consequences” (Chung 2005a:10). Hence, the sluicing examples in the pairs such as (27a) and (27b) ought to be “semantically equivalent”. That is to say, under Merchant’s (2001) semantic conditions, (27b) should be grammatical in the same way that (27a) is. However, this is not borne out. To compensate for this weakness, in addition to Merchant’s (2001) entailment condition, she proposes an extra lexico-syntactic requirement as in (28), demanding that “except for the moved interrogative phrase, the lexical items from which the sluice is constructed must be a subset of the lexical items from which the antecedent CP is constructed” and ensuring that “the ellipsis in sluicing involves no ‘return to the lexicon.’” Let’s see how it works on (27). Given the PF-deletion approach, at the end of the syntactic derivation, (27) will be represented as in (29).

(28) Every lexical item in the numeration of the sluice that ends up (only) in the elided IP must be identical to an item in the numeration of the antecedent CP.

(29) a. They’re jealous, but it’s unclear [of who [they’re jealous --]].
 b. *They’re jealous, but it’s unclear [who [they’re jealous **of** --]].²⁷

In (29a), the items in the numeration of the sluice include *of*, *who*, *they*, *be*, and *jealous*, three of which end up in the elided IP (*they*, *be*, *jealous*) and are each identical to an item in the numeration of the antecedent CP. Thus, given the entailment Condition, it is licit.²⁸ In contrast, in (29b), there is an item *of*, which ends up (only) in the elided IP, but which fails to be identical to an item in the numeration of the antecedent CP. Hence, it is out.

5.2 How parallelism works in Amis sluicing

Potsdam (2007) has provided solid evidence to prove that sluicing in Malagasy supports the approach of semantic parallelism and goes against the approach of syntactic parallelism. It is because the latter requires a strict one-by-one lexical or syntactic correspondence between conjuncts, which is difficult to obtain in the contrast of word order between the non-pseudocleft in the first conjunct and pseudocleft in the second conjunct. In this section, we will demonstrate that sluicing

²⁷ Prof. Lawrence A. Reid (p.c.) has a judgment opposite to Chung’s with respect to the presence of *of*. We consider this difference as a dialectal variation.

²⁸ Chung (2005a) proposes that the requirement that correlate entails the elided material is valid enough for her analysis in addition to the lexico-syntactic requirement. The mutual entailment is not necessarily in line with Romero’s (1998) idea. For more details, readers can refer to Chung (2005a).

in Amis encounters not only the similar problems in word order but also runs into difficulties in some mismatching factual markers and unparallel structures.

5.2.1 Non-parallelism in argument *wh*-remnant sluice

Regarding the type of argument *wh*-remnant in (16)-(18), all these sentences can be recovered or reconstructed as follows.²⁹

- (30) a. ma-'araw-ay ni Kulas ku cima a
 PF-see-FAC GEN Kulas NOM who LNK
 tamdaw, ka anu *u* *cima* [~~ku~~—
 person but IRR CN who NOM
~~ma 'araw ay~~—~~ni~~—~~Kulas~~] i, cuwa ka-fana'
 PF-see-FAC GEN Kulas TOP NEG KA-know
 kaku.
 1SG.NOM
 'Kulas saw someone, but I don't know who.'
- b. mi-'aca-ay ci Kulas tu maa-maan, ka
 AF-buy-FAC NOM Kulas ACC RED-what but
 anu *u* *maan* [~~ku~~—~~mi-'aca-an~~—~~ni~~—~~Kulas~~]
 IRR CN what NOM MI-buy-PF GEN Kulas
 i, cuwa ka-fana' kaku.
 TOP NEG KA-know 1SG.NOM
 'Kulas bought something, but I don't know what.'
- (31) a. mi-'aca-ay ci Kulas tu tilid, ka anu
 AF-buy-FAC NOM Kulas ACC book but IRR
~~*u* *sa-maan-ay* *a* *tilid* [~~ku~~—~~mi-'aca-an~~—~~
 CN SA-what-FAC LNK book NOM MI-buy-PF
~~ira]~~ i, cuwa ka-fana' kaku.
 3SG.GEN TOP NEG KA-know 1SG.NOM
 'Kulas bought a book, but I don't know what book.'

²⁹ According to the informants, the examples in (30-32) are the most unmarked reconstructed options. They are grammatical without the deletion.

- b. ma-letep-ay ni Kulas ku rutu, ka anu
 PF-pick-FAC GEN Kulas NOM bag but IRR
u nima (a rutu) [~~ku ma letep ay ni~~
 CN whose LNK bag NOM PF-pick-FAC GEN
 Kulas] *i*, cuwa ka-fana' kaku.
 Kulas TOP NEG KA-know 1SG.NOM
 'Kulas picked up a bag, but I don't know whose (bag).'
- (32) a. ira-ay ku tayni-ay, ka anu u cima
 EX-FAC NOM AF.come-FAC but IRR CN who
 [~~ku tayni ay~~] *i*, cuwa ka-fana' kaku.
 NOM AF.come-FAC TOP NEG KA-know 1SG.NOM
 'Someone is coming, but I don't know who.'
- b. Ira-ay ku mi-usi-ay tu tilid, ka anu
 EX-FAC NOM AF-read-FAC ACC book but IRR
u cima [~~ku mi usi ay tu tilid~~] *i*,
 CN who NOM AF-read-FAC ACC book TOP
 cuwa ka-fana' kaku.
 NEG KA-know 1SG.NOM
 'Someone is reading, but I don't know who.'

From the above data, there are many differences between the sluice clause and the correlate under a strict syntactic parallelism, which requires isomorphism in form and structure (Merchant 2001). The main difference between the two conjuncts, which in particular is shared by the three types, lies in topicalization. Take (30a) for example. The sluice clause is topicalized to initial position and followed by topic marker *i*. In comparison, no such topic marker can be found in the first conjunct. It seems that the difference in structure between conjuncts (non-topicalized *vs.* topicalized) makes syntactic parallelism on ellipsis inaccessible. However, the presence of topicalization may not be a problem for syntactic parallelism, since this word order change does not interfere with syntactic parallelism, which is only concerned with the parallelism within the internal structure of the sluiced clause.

Second, the irrealis marker *anu* uniformly occurs in the second conjunct rather than in the first conjunct. It also shows that both conjuncts are unparallel in structure in the addition of the irrealis marker. One may hold that since *anu* is actually outside of the elided material, it is not expected to have a corresponding element in the antecedent clause. Here, adopting a stricter version of syntactic parallelism, we consider it as a part of the *wh*-remnant.

Third, more specifically, there is a non-pseudocleft vs. pseudocleft distinction between conjuncts in (30) and (31), just as Malagasy sluicing (Potsdam 2007). The second conjunct of these sentences is a pseudocleft structure just as the structure in (14), repeated as (33), which the *wh*-remnant is predicated of the nominalized subject, initiated by the marker *ku*. In contrast, their first conjuncts are non-pseudoclefts. Such a non-parallelism in structure nullifies the deletion analysis under identity. However, parallelism on pseudocleft seems to occur in the existential construction in (32a, b). The subject of the pseudocleft is deleted under identity.

(33) [_{IP} [nominal predicate]_i] *ku* [_{NP} [_{CP} $\overline{\text{OP}}_i$ [_{TP} [_{NP} x_i (grammatical-subject)]]]]]

Fourth, non-parallelism appears when a different voice or focus constitutes a syntactic mismatch between conjuncts in (30b) and (31a). In both sentences, the verb *mi-'aca-ay* 'buy' owns an agent-focus verbal morphology *mi-* in the first conjunct, while its counterpart in the second conjunct is *mi-'aca-an* 'buy' with patient-focus verbal morphology.³⁰

Thus, even though the behaviors of topic marker *i* and irrealis marker *anu* may not violate syntactic parallelism, the last two points, relating to (non-)pseudocleft and the presence of focus, cannot escape the violation of strict syntactic isomorphism in ellipsis.

5.2.2 Non-parallelism in verbal *wh*-remnant sluice

When scrutinizing the recovery of the verbal *wh*-remnant type of sluices in (34), we find that it is very difficult for the sluice clause to be parallel with the antecedent clause in form, in addition to the topic marker *i* and the addition of the irrealis marker *anu*.

³⁰ Potsdam (2007:590) has noticed that there is also a voice mismatch between the active antecedent clause and the passive sluiced clause. Such a contrast can be taken as evidence to support the claim that syntactic parallelism does not exist in sluicing. However, from the viewpoint of voice morphology as a kind of inflectional morphology, he suggests that such a mismatch could be ignored when identity is a crucial criterion for ellipsis, especially for those who treat it as a kind of inflectional agreement (Pearson 2001, 2005 and Rackowski and Richards 2005). Therefore, Potsdam does not consider it as evidence against syntactic parallelism. In this paper, we will employ this factor along with other syntactic mismatches to argue against strict syntactic parallelism. The reason comes from Merchant's (2001, 2008) observations that case-matching and voice-matching are required in some languages, such as German, Greek, Russian, Polish, Czech, Slovene, Finnish, Hindi, Hungarian, Basque, etc., and that they play a crucial role in licensing deletion.

- (34) a. *ma-harek-ay* tu *mi-siking* ci Kulas, ka
 AF-finish-FAC ASP AF-exam NOM Kulas but
anu sa-maan-ay [~~ku siking ira~~] i,
 IRR SA-what-FAC NOM exam 3SG.GEN TOP
cuwa ka-fana' kaku.
 NEG KA-know 1SG.NOM
 'Kulas has finished the exam, but I don't know what the result is.'
- b. *mi-'adup-ay* tala-tukus ci Kulas, ka *anu*
 AF-hunt-FAC AF. go-mountain NOM Kulas but IRR
ma-sa-maan-ay tu [~~ku pi-'adup ira~~]
 MA-SA-what-FAC ASP NOM PI-hunt 3SG.GEN
~~tala-tukus~~] i, *cuwa ka-fana' kaku.*
 AF.go mountain TOP NEG KA-know 1SG.NOM
 '(lit.) Kulas went hunting in the mountains, but I don't know how.'
- c. *awa-ay* tayni ci Kulas, ka *anu ma-kna-ay*
 NEG-FAC AF.come NOM Kulas but IRR MA-how-FAC
 [~~ku ka-awa ira tayni~~] i, *cuwa*
 NOM KA-NEG 3SG.GEN AF.come TOP NEG
ka-fana' kaku.
 KA-know 1SG.NOM
 'Kulas didn't come, but I don't know why.'

Due to the fact that the *wh*-remnants in (34a, b) and in (34c) denote result and cause, respectively, the elided subjects manifest some discrepancies from the non-pseudocleft correlate clause with respect to the focus morphology in the pseudocleft structure. All these cater to the subject sensitivity principle.³¹ In addition, the verbal *wh*-remnants are correlated with the covert result or cause argument of the event predicates within the non-pseudocleft antecedent conjunct, in the sense of Parsons' (1990) event structure analysis. For example, in (34a), *sa-maan-ay* 'how' is only referring to the event *mi-siking* 'exam', not *ma-harek-ay tu mi-siking* 'finish taking the exam'. It means that conceptually speaking, the *how*-type *wh*-remnant denoting result manifests a unique delimitation on its correlate.³² In (34b), the

³¹ Morphologically, the subject in (34a) may be a headless relative clause containing a verb *siking* 'exam', which is distinct from the verbal counterpart *mi-siking* 'AF-exam' in the first conjunct. In addition, the focus mismatch also occurs in (34b) and (34c): *mi-'adup-ay* 'AF-hunt-FAC' vs. *pi-'adup* 'PI-hunt'. *awa-ay* 'NEG-FAC' vs. *ka-awa* 'KA-NEG'. Obviously, this structure disobeys the parallelism requirement of ellipsis.

³² In fact, English and Mandarin Chinese show the similar property on the use of *how*, as in (i) and (ii). For some native speakers, (i) is good, just not with a manner reading.

(i) *John has finished the job, but I don't know how.

wh-remnant, *ma-sa-maan-ay* ‘how’, is mainly concerned with the result of the event *mi-’adup-ay* ‘hunt’. In this case, the second predicate *tala-tukus* ‘go mountain-climbing’ can be recovered for the ease of perception. By the same token, the cause of the event in (34c) is related to the verbal negation *awa-ay* ‘not’ and the event *tayni* ‘come’. In that sense, the elided subject of the verbal *wh*-remnant in pseudocleft structure is distinct from the non-pseudocleft antecedent cause in structure and morphology. Obviously, this disobeys the spirit of syntactic parallelism under ellipsis.

5.2.3 Parallelism/non-parallelism in adverbial *wh*-remnant sluice

It is very interesting to note that the adverbial *wh*-predicate type of sluicing makes use of a different device to express the reconstructed elided sluice: the so-called serial verb construction by virtue of the linker *a*, reminiscent of the default (non-pseudocleft) strategy of initiating the *wh*-question of adverbial *wh*-remnant in (5c) and (6c), repeated below.

- (5) c. *i* *cuwa-(ay)* (*a*) *ma-lahuk* *kisu?*
 at where-FAC LNK AF-eat.lunch 2SG.NOM
 ‘Where did you have lunch?’
- (6) c. (i) *hacuwa-ay* (*a*) *ma-lahuk* *kisu?*
 at when-FAC LNK AF-eat.lunch 2SG.NOM
 ‘When did you have lunch?’

By comparing (5c) and (6c) with (35), it is apparent that the elided parts are extremely similar to the correlates except for the linker *a* along with the homogeneous topicalized structure marked by *i* and the irrealis marker *anu*. This strategy can be realized as a simple way to achieve syntactic parallelism. As we can see in (35a), the *wh*-word *i cuwa-ay* ‘where’ and the following verb *mi-’aca* ‘buy’ form a serial verb construction by the optional linker, just as the formation of the *wh*-question in (5c). In this case, we will assume that the elided part is the second predicate following the predicative (adverbial) *wh*-remnants. Therefore, this may be an instance of deletion under identity. More evidence comes from the other adjunct *wh*-remnants such as *hacuwa* ‘when’ and *hatu cima* ‘with whom’ in (35b) and (35c), respectively. It follows that the serial verb construction, one of the strategies of forming *wh*-interrogative

(ii) *Zhangsan kao-wan shi le, dan wo bu zhidao (shi) zenmeyang.
 Zhangsan exam-ASP exam ASP but I not know be how
 ‘Zhangsan has finished the exam, but I don’t know how.’

utilized by the adverbial *wh*-remnant as in (6c), is consistently used in this type.³³

- (35) a. mi-'aca-ay ci Kulas tu luma', ka anu
 AF-buy-FAC NOM Kulas ACC house but IRR
 i cuwa-ay [~~a mi 'aca ci Kulas tu~~
 at where-FAC LNK AF-buy NOM Kulas ACC
~~luma'~~] i, cuwa ka-fana' kaku.
 house TOP NEG KA-know 1SG.NOM
 'Kulas bought a house, but I don't know where.'³⁴
- b. pa-'aliwac tu kita, ka anu hakuwa
 CAUS-take.off ASP 1PL.INCL.NOM but IRR when
 tu [~~a pa 'aliwas kita~~] i, cuwa
 ASP LNK CAUS-take.off 1PL.INCL.NOM TOP NEG
 ka-fana' kaku.
 KA-know 1SG.NOM
 'We can take several days off, but I don't know when.'
- c. ma-lahuk-ay hatu cima ci Kulas, ka (anu)
 AF-eat.lunch-FAC with who NOM Kulas but IRR
 hatu cima [~~a ma-lahuk cingra~~] i,
 with who LNK AF-eat.lunch 3SG.NOM TOP
 cuwa ka-fana' kaku.
 NEG KA-know 1SG.NOM
 'Kulas had lunch with someone, but I don't know with whom.'

Concerning the issue of prepositional stranding relating to (35c), Amis sluicing behaves differently from English sluicing. Merchant (2001), considering the data of preposition stranding from twenty languages, comes to a generalization that a language *L* will allow preposition stranding under sluicing if and only if *L* allows preposition stranding under regular *wh*-movement (Merchant 2001:92). Merchant successfully predicts that preposition stranding should exist in English sluicing as in (36a), since English permits preposition stranding under regular *wh*-movement as in

³³ Readers may wonder whether it is possible to have (35a-b) reconstructed as a pseudocleft pattern in addition to the serial verb pattern. Our scrutiny clearly reveals that there is no such alternative. That is the reason why we group the examples as a separate subtype. Thus far, we still cannot explain this aberration.

³⁴ It is possible to have a simpler structure as in (i).

- (i) mi-'aca-ay ci Kulas tu luma', ka anu i cuwa-ay
 AF-buy-FAC NOM Kulas ACC house but IRR at where-FAC
 [~~a luma'~~] i, cuwa ka-fana' kaku.
 LNK house TOP NEG KA-know 1SG.NOM
 'Kulas bought a house, but I don't know where.'

(36b).

(36) a. Peter was talking with someone, but I don't know (with) who.

b. Who was he talking with?

Along this line, given that *hatu* is a preposition, and since Amis disallows prepositional stranding as shown in (37b), in comparison with the legitimate pied-piped prepositional *wh*-remnant in (37a), the prepositional stranding should be prohibited in sluicing, contrary to the fact in (38). Thus, this deviance can be interpreted as a violation of syntactic parallelism across languages.³⁵

- (37) a. *hatu cima a ma-lahuk ci Kulas?*
 with whom LNK AF-eat.lunch NOM Kulas
 'With whom did Kulas eat lunch?'
- b. * *cima a ma-lahuk hatu ci Kulas?*
 who LNK AF-eat.lunch with NOM Kulas
 'Who did Kulas eat lunch with?'

³⁵ The bare *wh*-word can be viewed as a remnant of the deletion of the whole subject of the pseudocleft. In this case, *hatu* 'with' is corresponding to *cafay* 'companion' in semantics as in (i). Obviously, this disparity can only be resolved *via* semantic parallelism as will be elaborated in Section 6.3.

- (i) *ma-lahuk-ay hatu cima ci Kulas, ka anu (u) cima*
 AF-eat.lunch-FAC with who NOM Kulas but IRR CN who
 [~~ku cafay ira ma-lahuk~~] i, cuwa ka-fana'
 NOM companion 3SG.GEN AF-eat.lunch TOP NEG KA-know
 kaku.
 1SG.NOM
 'Kulas had lunch with someone, but I don't know with whom.'

In fact, we have encountered much difficulty in obtaining the possible reconstructed form of (38) under the syntactic identity of ellipsis. That is, in general, this "stranding" *cima*, makes it difficult to achieve syntactic parallelism in Amis. That may be the reason why (i) sounds unacceptable to some native speakers. This may also explain why we resort to semantic parallelism in this case. Interestingly, the failure of reconstruction also occurs in the Mandarin Chinese counterpart given that sluicing in the language is derived from the pseudocleft as well in (ii).

- (ii) *Zhangsan gang *gen mouren* likai, dan wo bu zhidao [[Zhangsan
 Zhangsan just with someone leave but I not know Zhangsan
 gang gen likai de] ren] shi shei.
 just with leave DE person be whom
 'Zhangsan just left (with someone), but I don't know who the partner he left with is.'

- (38) ma-lahuk-ay *hatu* *cima* ci Kulas, ka *anu*
 AF-eat.lunch-FAC with who NOM Kulas but IRR
u *cima* i, cuwa ka-fana' kaku.
 CN who TOP NEG KA-know 1SG.NOM
 'Kulas had lunch with someone, but I don't know whom.'

5.2.4 Non-parallelism from head movement

There is an interesting mismatch relating to the retention of the factual marker *ay*. It indicates that the factual marker cannot be deleted freely especially in the cases of verbal *wh*-remnant and adverbial *wh*-remnant types. Take (35) for example.

In (35a), the suffix *-ay* has to be raised from the second predicate to the first adverbial *wh*-predicate; on the contrary, no such raising occurs in lack of the factual marker as in (35b). It implies that the factual marker has to be located in the prominent position and that it cannot be omitted in ellipsis. Theoretically speaking, we may assume that the suffix *-ay* as a functional head might be moved up to merge with the initial predicate before ellipsis. As we can see, in the antecedent conjunct, no such head movement occurs in a parallel way. In that sense, we may say that this is also a kind of syntactic non-parallelism.³⁶

Further evidence can be seen in (34), partially repeated (34a, b) for illustration. In (34a), the verbal *wh*-remnant *sa-maan-ay* retains the factual marker from the first predicate in the antecedent clause, balancing the factual mood in the sluice, even though the marker is not raised from the second predicate. The factual transfer of *-ay* in (34b) seems to be similar to (35a). However, theoretically, it is impossible to say that the factual marker is raised from the relative subject to the predicate position as (35a). I assume that factual retention is required in this type for parallelism, which, obviously, is not a strict syntactic isomorphism.

- (34) a. ma-harek-ay tu *mi-siking* ci Kulas, ka
 AF-finish-FAC ASP AF-exam NOM Kulas but
anu *sa-maan-ay* ([ku siking ira]) i, cuwa
 IRR SA-what-FAC NOM exam 3SG.GEN TOP NEG
 ka-fana' kaku.
 KA-know 1SG.NOM
 'Kulas has finished the exam, but I don't know what the result is.'

³⁶ Note that the lack of *-ay* in *hatu cima* 'with whom' in (35c) may pose a problem to this *ay*-floating assumption. We assume that it might be related to the nature of the preposition *hatu*. I will leave it open.

- b. *mi-'adup-ay* tala-tukus ci Kulas, ka *anu*
 AF-hunt-FAC AF.go-mountain NOM Kulas but IRR
ma-sa-maan-ay tu ([ku pi-'adup ira
 PF-SA-what-FAC ASP NOM PI-hunt 3SG.GEN
 tala-tukus]) i, cuwa ka-fana' kaku.
 AF.go-mountain TOP NEG KA-know 1SG.NOM
 'Kulas went hunting in the mountains, but I don't know how.'

Departing from the previous two types of sluicing, the factual head movement seems to have no effect on the argument *wh*-remnant type of sluicing, as repeated in (39). It reveals that the headless relative subject of the pseudocleft structure in the second conjunct does maintain some correspondence with the non-pseudocleft correlate clause at least in the respect of factual parallelism. Thus, the factual makers do not have to appear after the *wh*-remnants in (39a, b). Even in (39c) with parallel pseudocleft structures across conjuncts, the existential predicate *ira-ay* does not force *-ay* to reappear after *wh*-remnant *cima*. We postulate that the non-occurrence of the aspect marker is probably due to the fact that the aspect marker only sticks to a verbal or adverbial *wh*-predicate. Argument *wh*-remnants, such as *cima* 'whose', *nima* 'whose', *maan* 'what', and *cimanan* 'whom', are nominal elements, which cannot be affixed with *-ay* as illustrated in (39a').³⁷

- (39) a. *ma-'araw-ay* ni Kulas ku cima a
 PF-see-FAC GEN Kulas NOM who LNK
 tamdaw, ka anu *u cima* [~~ku ma-'araw-ay~~
 person but IRR CN who NOM PF-see-FAC
~~ni Kulas~~] i, cuwa ka-fana' kaku.
 GEN Kulas TOP NEG KA-know 1SG.NOM
 'Kulas saw someone, but I don't know who.'

³⁷ The informants that we have checked with still indicate that *-ay* in the first conjunct has to reappear in the second to achieve parallelism in aspect. Instead of being attached with factual marker, *wh*-words such as *cima* 'who', *nima* 'whose', and *cimanan* 'whom' morphologically contain case affixes inside. The prefix *c-* in *cima* indicates Nominative case, the prefix *n-* in *nima* expresses Genitive or Possessive Case, and the circumfix *c-...-an* in *cimanan* represents Dative or Location Case. *Maan* 'what' does not contain such affixes and thus requires a case-marker.

- a'. * ma-'araw-ay ni Kulas ku cima a
 PF-see-FAC GEN Kulas NOM who LNK
 tamdaw,ka anu u cima-ay [ku—ma-'araw
 person but IRR CN who-FAC NOM PF-see
 ni—Kulas] i, cuwa ka-fana' kaku.
 GEN Kulas TOP NEG KA-know 1SG.NOM
 'Kulas saw someone, but I don't know who.'
- b. ma-letap-ay ni Kulas ku rutu, ka anu
 PF-pick-FAC GEN Kulas NOM bag but IRR
 u nima (a rutu) [ku—ma-letap-ay—ni—
 CN whose LNK bag NOM PF-pick-FAC GEN
 Kulas] i, cuwa ka-fana' kaku.
 Kulas TOP NEG KA-know 1SG.NOM
 'Kulas picked up a bag, but I don't know whose (bag).'
- c. ira-ay ku tayni-ay, ka anu u cima
 EX-FAC NOM AF.come-FAC but IRR CN who
 [ku—tayni-ay] i, cuwa ka-fana' kaku.
 NOM AF.come-FAC TOP NEG KA-know 1SG.NOM
 'Someone is coming, but I don't know who.'

5.3 Summary

From the above discussions, the strict morpho-syntactic identity requirement of the syntactic parallelism in (21), proposed by Fox and Lasnik (2003), Fiengo and May (1994, 1998), Chung, Ladusaw, and McCloskey (1995), among many others, is untenable, even though there exist some parallelisms with respect to serial verb construction. The essential structural deviances between conjuncts mainly lie in the absence/presence of topicalization and pseudocleft. In addition, the disparity of voice/focus/factual morphology and of prepositional stranding between conjuncts also points to the fact that Amis sluicing cannot be computed under the strict syntactic parallelism. Finally, the necessity of the irrealis marker *anu* in the second conjunct is another obstacle to achieve strict isomorphism. Therefore, we come to the conclusion that empirically speaking, strict syntactic parallelism is impossible to obtain in Amis sluicing. Below, we will propose a solution to Amis sluicing in an attempt to tolerate various types of non-parallelism between conjuncts.

6. Our solution

6.1 Semantic parallelism

In this section, we argue that a pure semantic parallelism approach embraced by Schwarzschild (1999) and Merchant (2001) is sufficient to handle all the mismatches between the two conjuncts. The lexico-syntactic requirement entertained by Chung (2005a) is undesirable in Amis. Before going into the details of this part, we will first discuss the computational processes of sluicing in Amis, which helps understand how the notion of parallelism affects the formation of sluicing.

We have noticed that Amis uniquely utilizes topicalization to derive sluicing. Evidence from various types of reconstruction shows that the topicalized element is not only the *wh*-remnant itself, but the whole sluice clause, as illustrated in (40). The topicalized sluice clause is followed by the topic marker *i*, which frames the main sluice structure. Another conspicuous marker of Amis sluice is the irrealis marker *anu*, whose meaning usually varies with the structure, ranging from possibility to conjecture. We assume that it might be a special lexico-syntactic sluice marker accompanying the *wh*-remnant and denoting the modality meaning of possibility in sluicing. So far, these two markers constitute the external distinctive structure in question. Certainly, no counterparts could be found in the first conjunct.

(40), ka [[*anu wh*-remnant] [-.....] *i*], *cuwa ka-fana' kaku*

Internally speaking, given that interrogatives in Amis are *wh-in-situ* either in the simple clause or in the pseudocleft (Wei 2009), as we have seen, sluicing in Amis actually employs both strategies to form questions. It means that in either way the *wh*-remnant is base-generated at the initial predicate position, not moved from somewhere else. The whole predicate, *anu wh*-remnant, is definitely a constituent initiating the entire sluice. Of these two strategies, the pseudocleft strategy is used by argument and verbal *wh*-remnant sluices, whereas the non-pseudocleft strategy, more specifically the so-called serial verb structure, is employed by the adverbial *wh*-predicate sluice. The former case gives rise to many syntactic mismatches caused by the pseudocleft sluice and non-pseudocleft correlate, such as the divergence on voice/focus morphology resulting from the Subject Sensitivity Principle, along with the addition of the *ku* marker initiating the headless relative clause in the pseudocleft. In contrast, the latter serial verb use manifests a parallel structure across conjuncts, except for the deviation of the prepositional stranding.

When it comes to the deletion of the material after the *wh*-remnant in (40), we

suggest that the deletion is licensed and constrained by the following factors. First of all, the size of the deletion can be a headless relative clause, NP, in the cases of argument and verbal *wh*-remnant sluices as in (41a). In fact, nominalization has long been recognized as a sort of relativization, which contains nominalized verbal elements. On the other hand, the range of deletion can be a *vP* complement in the case of adverbial *wh*-predicate in (41b), which implements *vP*-deletion directly.³⁸ Furthermore, both sorts of ellipsis are licensed by the heads of the *wh*-predicates via head-government (Lobeck 1995).

- (41) a. $[_{IP} \textit{anu wh}\text{-remnant}_i [_{ku} [_{NP} [_{CP} \textit{OP}_i \textit{---} x_i \textit{-(grammatical-subject)}]]]]]$
 b. $[_{IP} \textit{anu wh}\text{-remnant} [_{vP} \textit{a VP}]]$ ³⁹

In fact, the categories of deletion in (41) are different: one is a relativized nominal structure and the other is a *vP* complement, even though both structures involve verbal elements. In order to strictly regulate deletion, we propose that Merchant's (2001) Focus condition on IP-ellipsis and VP-ellipsis can be collapsed to deal with (41) as formulated in (42) and (43).⁴⁰

(42) e-GIVENness

An expression E counts as e-GIVEN iff E has a salient antecedent A and, modulo \exists -type shifting, (a) A entails F-clo(E), and (b) E entails F-clo(A).

(43) Focus condition on IP/VP-ellipsis

An IP/VP α can be deleted only if α is e-GIVEN.

6.2 Semantic isomorphism on IP-ellipsis

To demonstrate how (42) and (43) actually work in an argument *wh*-remnant sluice, the correlated examples such as (30a) can be sketched as in (44) at the end of

³⁸ The SVC can be analyzed as a coordinate structure or as a bi-clausal complementation. Here, for convenience, we take V_2 as a *vP* complement of V_1 .

³⁹ Aboh (2009) has proposed a similar structure, $[_{CP} \dots [_{TP} \dots V_1 \dots [_{VP} \dots [V_2 \dots]]]]$, for SVC in Kwa (and Khoisan), with a focus on the rejection of the Argument-Sharing Hypothesis (ASH), which requires that V_1 and V_2 must share an internal argument (Collins 1997, Baker 1989, etc.). Besides, an V_2 movement is triggered by the EPP feature to derive the V_1 - V_2 -O sequence. In this work, we propose that there is an aspect head movement from V_2 to V_1 . The ASH is not obeyed in our examples.

⁴⁰ Merchant improves Schwarzschild's (1999) version of GIVENness, F-closure, and S-Focus condition on VP-ellipsis to cope with the defects of the former analysis. For VP-ellipsis, (i) is instantiated to demonstrate the mutual entailment and the licensing of VP-ellipsis.

- (i) Abby called Chunk an idiot after BEN did.
 a. $VP_A' = \exists x.x \text{ called Chunk an idiot, F-clo}(VP_E) = \exists x.x \text{ called Chunk an idiot}$
 b. $VP_E' = \exists x.x \text{ called Chunk an idiot, F-clo}(VP_A) = \exists x.x \text{ called Chunk an idiot}$

its syntactic derivation. The sluice is surrounded by the outer brackets and the trace or lower copy of the moved interrogative phrase is represented by a dash.

- (44) mi-'aca-ay ci Kulas tu maa-maan, ka anu
 AF-buy-FAC NOM Kulas ACC RED-what but IRR
 u maan [*ku OP* [mi-'aca-an ni Kulas ---]] i,
 CN what NOM MI-buy-PF GEN Kulas TOP
 cuwa ka-fana' kaku.
 NEG KA-know 1SG.NOM
 'Kulas bought something, but I don't know what.'

In (44), the elided material is counted as e-GIVEN, since IP_A' entails $F\text{-clo}(IP_E)$ and IP_E' entails $F\text{-clo}(IP_A)$, as shown in (45).

- (45) a. $IP_A' = F\text{-clo}(IP_A) = \exists x. \text{mi-'aca-ay } ci \text{ Kulas } x$
 b. $IP_E' = F\text{-clo}(IP_E) = \exists x. \text{mi-'aca-an } ni \text{ Kulas } x$

By the Focus condition in (43), IP_E can be deleted as the mutual entailment is fulfilled. It is of importance to note that Merchant's (2001) semantic parallelism ignores the lexico-syntactic mismatches such as the inflectional morphology *-ay* and *-an* as well as the argument structure alternations manifested in the variations of the case marker *ci* and *ni*. This disregard just reinforces Potsdam's (2007) observations that certain inflected (unvalued) features can be ignored in the computation of (lexical) identity.

However, a problem still arises. As noted in (41a) and (44), between the elided clause and *wh*-remnant, there are still an operator and *ku*, which are deleted as well. To deal with the similar problem within the so-called propositional islands, including relative clauses, Merchant (2001:208-216) proposes that the parallel between (46a) and (46b) in English is only a superficial manifestation and that the sluice in (46a) does not in fact contain an island but has a structure like (47). In other words, there is no so-called island repair in this case, but in fact a kind of semantic reduction in interpretation.

- (46) a. They hired someone who speaks a Balkan language—guess which.
 b. *Guess which (Balkan language) they hired someone who speaks!

- (47) Guess which_i [~~she speaks t_i~~]!

It follows that the deleted IP in (47) can be realized as (48) and represented as (49) by replacing the F-marked material and by existentially closing the unbound variable.

(48) $[_{IP} she_6 \text{ speaks } [_x \text{ Balkan language}]]$

(49) $IP_E' = F\text{-clo}(IP_E) = \exists x.g(6) \text{ speaks } x \text{ and } x \text{ is a Balkan language}$

The embedded IP of the first conjunct can act as an antecedent to the elided IP, given that the value assigned to $she_6^{E\text{-type}}$ in (48) is the same as the value assigned to t_6 in the embedded subject of the first conjunct. This gives (50) for IP_A . Thus, IP_A and IP_E are mutually entailed and the propositional island repair can be explained.

(50) $IP_A' = F\text{-clo}(IP_A) = \exists x.g(6) \text{ speaks } x \text{ and } x \text{ is a Balkan language}$

In line with this analysis, we can postulate that the operator and the functional category *ku* do not exist when the semantic parallelism is calculated at the level of LF and even when the IP-ellipsis is implemented under the mutual entailment achieved in (45) at PF, resembling the truncating complex NP structure in (47). We have noted that even though the operator and *ku* are not involved in the calculation of LF entailment, syntactically, their deletion in syntax may violate some syntactic principles, such as the Projection Principle, Recoverability, Structure Preservation, the Ban on Vacuous Quantification (for an unbound trace), and so on. To escape such a dilemma, we may assume that the deletion happens at the level of PF, not in narrow syntax. With the IP being elided, *ku* is of no use at PF and can be deleted. In addition, the operator is phonologically null at this level.

Furthermore, the parallel pseudocleft structures across conjuncts in (32a), repeated as (51), satisfy the e-GIVENness Condition in (52). Thus, IP-ellipsis is eligible.

(51)

ira-ay	ku	tayni-ay,	ka	anu	u	cima
EX-FAC	NOM	AF.come-FAC	but	IRR	CN	who
[<i>ku</i> <i>OP</i>		[tayni-ay --]]	i,	cuwa	ka-fana'	kaku.
NOM		AF.come-FAC	TOP NEG	KA-know	ISG.NOM	

'Someone is coming, but I don't know who.'

(52) a. $IP_A' = F\text{-clo}(IP_A) = \exists x. \text{come } x$
 b. $IP_E' = F\text{-clo}(IP_E) = \exists x. \text{come } x$

By the same token, the examples in (34) can be illustrated in (53).

- (53) a. ma-harek-ay tu mi-siking ci Kulas, ka
 AF-finish-FAC ASP AF-exam NOM Kulas but
anu sa-maan-ay [ku OP [-- siking ira]] i,
 IRR SA-what-FAC NOM exam 3SG.GEN TOP
 cuwa ka-fana' kaku.
 NEG KA-know 1SG.NOM
 'Kulas has finished the exam, but I don't know what the result is.'
- b. mi-'adup-ay tala-tukus ci Kulas, ka
 AF-hunt-FAC AF.go-mountain NOM Kulas but
anu ma-sa-maan-ay tu [ku OP [--pi-'adup
 IRR MA-SA-what-FAC ASP NOM PI-hunt
ira tala-tukus]] i, cuwa ka-fana' kaku.
 3SG.GEN AF.go-mountain TOP NEG KA-know 1SG.NOM
 'Kulas went hunting in the mountains, but I don't know how.'
- c. awa-ay tayni ci Kulas, ka *anu*
 NEG-FAC AF.come NOM Kulas but IRR
ma-kna-ay [ku OP [-- ka-awa ira tayni]]
 MA-how-FAC NOM KA-NEG 3SG.GEN AF.come
 i, cuwa ka-fana' kaku.
 TOP NEG KA-know 1SG.NOM
 'Kulas didn't come, but I don't know why.'

In (53a), the elided IP can find its antecedent IP in the first conjunct. By virtue of vehicle change, the r-expression *Kulas* and the pronominal *ira* are considered parallel in case the value returned by the assignment function for the translation of *ira(x)* picks out the same individual that is returned by the assignment function for the name *Kulas*. In this case, it is the result or cause verbal *wh*-predicate (*p*) that is focused. As a result of \exists -type shifting, the antecedent IP_A' entails the $F\text{-clo}(IP_E)$, and IP_E' entails the $F\text{-clo}(IP_A)$, as in (54). The differences in the inflectional morphology and case-marker caused by argument structure alternation are invisible at LF. The headless relative clause island with operator and *ku* is nullified under this semantic approach. The same analysis is also applied to (53b, c).

- (54) a. $IP_A' = F\text{-clo}(IP_A) = \exists p. p$ mi-siking ci Kulas
 b. $IP_E' = F\text{-clo}(IP_E) = \exists p. p$ siking ira

Interestingly, it seems that the factual marker *-ay* does not go with the deletion part in (53) and is still retained to attach with the verbal *wh*-remnants. We can assume

that the factual floating is achieved with the aid of island redemption, which nullifies the complex NP structure and makes the floating possible. In contrast, the same marker does not float in (44) and (51), probably due to the fact that the nominal *wh*-remnants cannot assume this marker in Amis.

6.3 Semantic isomorphism on serial VP-ellipsis

We will show that the sluice of the adverbial *wh*-predicate in (35), partially repeated in (55), demonstrates a kind of VP-ellipsis in terms of the semantic parallelism. The syntactic mismatch such as *ay*-raising can easily be explained under this account. As predicted, the ellipsis of the *vP* depends on the e-GIVENness Condition in (42) and Focus condition on VP-ellipsis in (43).

(55)	mi-'aca-ay	ci	Kulas	tu	luma',	ka	anu
	AF-buy-FAC	NOM	Kulas	ACC	house	but	IRR
	i	cuwa-ay	[a	mi-'aca	ci	Kulas	tu
	at	where-FAC	LNK	AF-buy	NOM	Kulas	ACC
	luma']	i,	cuwa	ka-fana'	kaku.		
	house	TOP	NEG	KA-know	1SG.NOM		
	'Kulas bought a house, but I don't know where.'						

In this case, it is the adverbial *wh*-predicate that is focused and is \exists -type shifted to be an \exists -bound variable (*p*). VP_A' entails the result of replacing F-marked parts of the deleted VP by the \exists -bound variable (*p*) (F-clo(IP_E)). On the other hand, VP_E' also entails the F-clo(VP_A) as in (56). Thus, the Focus condition is satisfied and VP can be deleted. By semantic isomorphism, the linker *a* and factual affix *-ay* can be ignored. But, the latter can still be attached to the predicate in the initial position due to the fact that the head movement does not affect the semantic parallelism between conjuncts.

- (56) a. $IP_A' = F-clo(IP_A) = \exists p. p$ mi-'aca-ay ci Kulas tu luma'
 b. $IP_E' = F-clo(IP_E) = \exists p. p$ mi-'aca ci Kulas tu luma'

The same diagnostic can be applied to the rest of the examples in (35). However, with respect to the generalization of prepositional stranding, (38), repeated as (57), is predicted to be illicit under the notion of syntactic parallelism as illustrated in (58); however, this predication is contrary to the grammaticality of (57).

- (57) ma-lahuk-ay *hatu* *cima* *ci* Kulas, *ka*
 AF-eat.lunch-FAC with who NOM Kulas but
anu *u* *cima* *i*, *cuwa* *ka-fana'* *kaku*.
 IRR CN who TOP NEG KA-know 1SG.NOM
 'Kulas had lunch with someone, but I don't know whom.'
- (58) * ma-lahuk-ay *hatu* *cima* *ci* Kulas, *ka* (*anu*)
 AF-eat.lunch-FAC with who NOM Kulas but IRR
cima [~~*a* *hatu* *ma-lahuk* *cingra*~~] *i*,
 who LNK with AF-eat.lunch 3SG.NOM TOP
cuwa *ka-fana'* *kaku*.
 NEG KA-know 1SG.NOM
 'Kulas had lunch with someone, but I don't know with whom.'

To solve this dilemma, we propose that the semantic parallelism can be utilized. According to our informant, (57) is generally paraphrased or understood as (59), in which the preposition *hatu* 'with' has been semantically realized as a verb *cafay* 'companion' along with a serial verb *ma-laluk* 'eat'. Conceptually speaking, the verbal use of accompaniment is more preferable than the prepositional use from the perspective of canonical pattern in Austronesian languages. Thus, given Focus condition on IP-ellipsis, by \exists -type shifting, the antecedent IP_A ' entails the $F\text{-clo}(IP_E)$ in (60a), and IP_E ' entails the $F\text{-clo}(IP_A)$, in (60b), even though there is no so-called lexical-identity across conjuncts. Accordingly, the IP-ellipsis in (59) is licensed under the Focus Condition.

- (59) ma-lahuk-ay *hatu* *cima* *ci* Kulas, *ka* *anu*
 AF-eat.lunch-FAC with who NOM Kulas but IRR
 (u) *cima* [*ku* [*cafay* *ira* *ma-laluk* --]]
 CN who NOM companion 3SG.GEN AF-eat.lunch
i, *cuwa* *ka-fana'* *kaku*.
 TOP NEG KA-know 1SG.NOM
 'Kulas had lunch with someone, but I don't know with whom.'

(60) a. $IP_A = \exists x$. ma-lahuk-ay *hatu* *x* *ci* Kulas

'Kulas had lunch with *x*'

$F\text{-clo}(IP_E) = \exists x$. *cafay* *ira*(Kulas) *ma-laluk* *x*

'*x* is accompanied by him (Kulas) to have lunch'

- b. $IP_E' = \exists x. \text{cafay ira(Kulas) ma-lauk } x$
 ‘x is accompanied by him (Kulas) to have lunch’
 $F\text{-clo}(IP_A) = \exists x. \text{ma-lahuk-ay hatu } x \text{ ci Kulas}$
 ‘Kulas had lunch with x’

However, one problem still arises with respect to a variant of (35c) (cf. 20c), which prohibits the covert correlate of *hatu cima* ‘with whom’ as shown in (61).⁴¹ The example (61) poses a problem to the proposed semantic parallelism, since the correlate and the elided clause are supposed to be mutually entailed and the VP-ellipsis should be licitly licensed. However, this prediction is not borne out.

- (61) * ma-lahuk-ay ci Kulas, ka (anu) *hatu* *cima*
 AF-eat.lunch-FAC NOM Kulas but IRR with who
 [a ——— ma lahuk ——— cingra] i, cuwa ka-fana’
 LNK AF-eat.lunch 3SG.NOM TOP NEG KA-know
 kaku.
 1SG.NOM
 ‘Kulas had lunch, but I don’t know with whom.’

After checking the intuition of the informant, we come to the realization that in Amis, the verb *lahuk* ‘eat lunch’ does not denote the meaning that there is a partnership in this event, in contrast to the verb *’udut* ‘fight’, which implies that another person is involved in the event. It means that if the prepositional phase *hatu* ‘with’ does not appear in the sentence, it is impossible to convey the partnership denotation. In addition, as in (59), the preposition *hatu* ‘with’ can be semantically realized as a verb *cafay* ‘companion’. Building on these facts, we assume that (61) can be reanalyzed as (62), the first correlate of which retains the original meaning without any accompanying argument and the sluice clause of which is reconstructed into a clause containing the verb *cafay* ‘companion’ due to the implication of the preposition *hatu* ‘with’ in the initial position.

⁴¹ It also poses a problem to the syntactic parallelism.

- (62) * ma-lahuk-ay ci Kulas, ka anu {hatu} cima
 AF-eat.lunch-FAC NOM Kulas but IRR with who
 [ku [cafay ira ma-laluk --] i, cuwa
 NOM companion 3SG.GEN AF-eat.lunch TOP NEG
 ka-fana' kaku.
 KA-know 1SG.NOM
 'Kulas had lunch, but I don't know with whom.'

Accordingly, the Focus condition on IP-ellipsis is not satisfied because the correlate clause and the sluice clause are not mutually entailed: the former does not imply any accompanying argument of the event, whereas the latter does. Thus, the IP-ellipsis is not eligible in (62).

6.4 Null lexico-syntactic requirement

As a matter of fact, the omission of *ku* jeopardizes Chung's (2005a) lexico-syntactic requirement in (28), since it is not identical to any item in the numeration of the antecedent CP. However, it seems that the extra markers that externally frame sluicing such as *anu* and *i* are tolerated by this requirement due to their lack of counterparts in the antecedent clause. Moreover, regarding morphological disparity, the lexico-syntactic requirement expects that sluicing does not tolerate voice mismatches or other argument structure alternations (Chung 2005a). Thus, Chung herself admits that the voice mismatch in sluicing in Malagasy (Potsdam 2003) and even its structural distinction between cleft and non-cleft (Paul and Potsdam 2004) will surely bring about troubles for the proposal and raise the unwelcome result that argument structure mismatches might be tolerated in some languages but not in others.⁴²

In addition, Chung (2005a) mostly depends on the sprouting type of sluicing to test the lexico-syntactic requirement on preposition stranding. As we have seen in (20c), repeated below, Amis cannot tolerate the sprouting type of preposition stranding. In this respect, the requirement is untenable in Amis sluicing. For the sake of these uncertainties, we will put aside this compensatory requirement in Amis.

⁴² In line with Pearson's (2005) claim that Malagasy subject is actually an A'-element and that the 'voice' system does not actually encode argument structure alternations at all, Chung further suggests that this 'active' and 'passive' morphology is not treated as voice morphology, but as the inflectional morphology resulting from *Wh*-Agreement. Then, the verbs of the antecedent and elided IP's are identical in the numeration, since they are not yet valued for the feature that *Wh*-Agreement spells out.

- (20) c. ma-lahuk-ay *(hatu cima) ci Kulas, ka (anu)
 AF-eat.lunch-FAC with who NOM Kulas but IRR
hatu cima i, cuwa ka-fana' kaku.
 with who TOP NEG KA-know 1SG.NOM
 'Kulas had lunch with someone, but I don't know with whom.'

7. Conclusion

In this paper, we have demonstrated that the view from stricter syntactic parallelism fails to explain why sluicing in Amis can tolerate morphological and structural mismatches caused by argument structure alternations or pseudocleft/non-pseudocleft distinction as well as a violation of preposition stranding generalization (Merchant 2001). We propose that all these mismatches can be satisfactorily captured under semantic parallelism in terms of the Focus condition on IP/VP-ellipsis which is employed to cope with the IP-ellipsis of the pseudocleft sluice and the VP-ellipsis of the serial verb sluice in Amis. Structurally, the whole sluice clause is unanimously topicalized in Amis before the ellipsis of IP or VP within the base-generated sluice interrogatives. Theoretically, we come to the conclusion that Amis sluicing strictly adheres to the mutual entailment of e-GIVENness, while the lexico-syntactic requirement proposed by Chung (2005a) is undesirable.

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Graduate Institute of Taiwanese Cultures and Languages
National Kaohsiung Normal University
Kaohsiung, TAIWAN
Ting-Chi Wei: tingchiwei@nkn.edu.tw

阿美語切割句之平行研究

魏廷冀

國立高雄師範大學

本文論證，嚴格的句法平行限制無法解釋，阿美語切割句實際所表現出來的詞彙與句法之不對稱現象。基於此語言事實，我們提出利用語意同形及焦點刪略(Merchant 2001)的概念，來解釋這種因 IP/VP-刪除所造成的不平行現象；即藉由準分裂切割句之 IP-刪除及連謂切割句之 VP-刪除，將阿美語之切割結構統整為一種句法上先主題化再刪除的句式，語意上則完全遵守 e-GIVENness 之相互蘊涵原則以及焦點條件之刪除原則，並排除所謂詞彙、句法折衷方案之分析(Chung 2005a)。

關鍵詞：阿美語、切割句、刪略、平行原則、語意同形