

Repair in Verb-initial Languages*

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The phenomenon of repair has not been well researched, although it is pervasive in daily conversation. Fox, Hayashi & Jasperson's (1996) pioneering work on repair in English and Japanese has shown that languages with different syntactic structures organize repair in different ways. Speakers of English, which has a rigid S-V-O word order, use much clausal recycling, while recycling in Japanese, a verb-final language with loosely-organized constituents, is only made locally at a constituent-initial position or at the trouble source. However, this study on the repair phenomenon in Tsou and Cebuano, both predicate-initial Austronesian languages in Taiwan and in the Philippines, respectively, as well as the later studies on repair in Bikol (Fincke 1998) and Indonesian (Wouk 2004), has shown that both word order and rigidity/looseness of this word order are not the only factors that organize repair. We propose that constituent structure is a more important factor that is responsible for the organization of repair in languages.

Key words: repair, verb-initial, Cebuano, Tsou, word order, constituent

1. Introduction

The phenomenon of repair has not been well researched,¹ although it is pervasive in daily conversation. In this study we shall investigate repair in Tsou and Cebuano, both predicate-initial² Austronesian languages in Taiwan and in the Philippines, respectively. It will be shown that constituency, as well as the word order of the language and the rigidity of this word order, influences the organization of repair in both languages. These factors could also be used to examine repair in other languages as well.

In their examination of conversation data in English and Japanese, Fox, Hayashi &

* An early version of this paper was presented at the Ninth International Symposium on Chinese Languages and Linguistics (IsCLL-9), held at National Taiwan University, November 19-21, 2004. We are especially grateful to the constructive comments of Shuanfan Huang, Sandra Thompson, and anonymous reviewers. The authors alone are responsible for any remaining errors contained in this paper.

¹ We are aware of an ongoing research project conducted by Fox and Wouk, that will investigate repair in fourteen languages (Wouk, pers. comm.).

² In this paper, we treat Predicate as a term that also covers verbs.

Jasperson (1996) have observed that syntactic practices constrain the organization of repair. Differing repair strategies in the two languages arise from differences in the organization of their verb morphology. English tends to organize repair globally by recycling back to clause-initial position, but Japanese speakers usually do local repairs; that is, Japanese speakers may only repeat or replace the part of clause produced so far.

In actual structural practices (Fox, Hayashi & Jasperson 1996), English displays a rigid SV(O) word order, and the presence of a subject is required. The beginning of the clause in English is rich with information to project its likely continuation. On the contrary, Japanese word order in conversation data is rather loose. Subject and object are usually absent. Unlike English, the beginning of the clause in Japanese is often loosely associated structurally with what is to follow. English speakers and recipients are able to use 'early projection', but Japanese speakers and recipients cannot. In English, the beginning of the clause is a coherent syntactic and interactional locus from which a re-projection for the entire clause can be made. However, in Japanese, projection is done much more bit-by-bit. The study seems to suggest that word order (English as verb-second and Japanese as verb-final) and rigidity of word order (English clause structure as rigid and Japanese clause structure as loose) organize repair.

Huang & Chui (1997) suggest that the dominant word order in a spoken Mandarin Chinese corpus is AVO and SV.³ The word order in Mandarin Chinese is far more sensitive to valency roles than to activation states of nominal arguments, and the occurrence of unexpressed arguments is a syntactically restricted phenomenon. Based on corpus observation, except for some subpatterns, Mandarin Chinese word order is considered rigid. However, Chui's (1995) study of repairs shows that in Mandarin Chinese, the extent of recycling from trouble source is not conditioned by syntax. She observes that it is the quantity and the lexical-form constraints that control the extent of recycling in Mandarin Chinese conversation. By quantity constraint, repair tends to recycle only the previous word adjacent to the trouble source, whatever its category, which is more or less compatible with the proposal that Mandarin syntax is phrase-oriented (Tao 1996). By lexical-form constraint, recycling to the beginning of a clause tends to be blocked if the preceding word is in NP form (Chui 1995:91).

In his study of repair in Bikol, a predicate-initial western Austronesian language spoken on the southeastern peninsula of Luzon Island, Fincke (1999) finds that repair in the language is almost always organized by a syntactic constituent. This observation is not at all surprising. By looking at prosody in Cirebon Javanese, Ewing (2005) has also argued for the role of constituency in structuring clauses during spoken interaction. (See also Bybee 2002, for evidence in spoken English.)

³ Tao's (1996) investigation of Mandarin discourse yielded a different result, showing conversational Mandarin to prefer low transitive clauses with one overt argument.

Repair in Bikol tends to begin at the closest syntactic boundary. The tendency for repair to begin at the beginning of the clause is weak, except when the predicate or a second-position enclitic is being repaired. Like Japanese, Bikol clause structure is inconsistent: The Prepositional Phrase can be positioned before or after the Predicator Group, thereby contributing to a lack of projectability. In its organization of repair, Bikol is like English in that some types of arguments are usually expressed after the verb has occurred; that is, the verb tends to be located near sentence-initial position. However, Bikol is different from English in that early portions of a constituent cannot predict the following morphosyntactic types or set of types that will be produced next. For example, a core nominal participant could be expressed as a pronominal cliticizing to the predicate or in full NP form further down the clause, and the hearer will not have any idea when this NP will occur, if at all. The study of repair in Bikol seems to rule out word order as the main factor in the organization of repair, since although the position of the verb in Bikol resembles that in English, it organizes repair similarly to Japanese.

In Wouk's study on Indonesian (2004), a western Austronesian language that is verb-medial and prepositional like English, the verb occurs early in the clause; therefore, Indonesian has a higher projectability than Japanese. It has a relatively more consistent word order, although more variable than English. There is a higher degree of ellipsis, the occurrence of non-overt elements, and therefore has lower projectability than English.

Indonesian recycling patterns appear to orient to both verb phrase and clause, although neither pattern is particularly frequent. On the one hand, early projectability gives way to clausal recycling; on the other hand, subject ellipsis, which causes reduced frequency of full clauses, produces verb phrase (V-O) constituents. Indonesian is verb-second like English, but it does not organize its repair like English. On the contrary, repair is more similar to Japanese, which has the same loose clausal structure. This gives rise to certain questions: (1) What are the crucial factors that give rise to different repair patterns? (2) How is repair patterned in Cebuano and Tsou, both verb-initial languages? Does repair in these languages pattern similarly or differently from Bikol? How does the syntax of these two languages constrain the occurrence of repair?

The study on the aforementioned languages looked into two main factors: projectability based on the position of the verb, and consistency of word order in discourse. As shown in Table 1 below, in verb-initial and verb-second languages such as English, Indonesian, and Bikol, the verb comes early in the clause and so there is higher projectability in these languages as compared to Japanese, where the verb comes late in the clause, and so there is lower projectability. As for consistency of clause structure, English has the highest consistency, while Japanese is the least consistent, as shown by the percentage of zero anaphora in discourse—20.5% and 73.2% for English and Japanese, respectively (Chen 1986, cited in Huang 1997). Indonesian has a high frequency of

subject ellipsis and Bikol constituent order is highly variable making both of these languages moderate in consistency. These are summarized in Table 1. As for Mandarin, Huang & Chui (1997) classify it as having a rigid word order; however, Tao (1996) has shown evidence that this rigidity of word order in Mandarin is only true at the phrase level and not beyond it. It is no wonder that Mandarin speakers recycle only the part of speech adjacent to it (Chui 1995), because there is no syntactic constraint at all at the clause level. Nevertheless, this is beyond the scope of our study and we shall not pursue this issue further.

Table 1: Summary of the position of the verb and consistency of five languages

	Position of the verb	Consistency (represented by the percentage of zero anaphora or word order variability)
English	Verb-second	High; 20.5% zero anaphora (Chen 1986, cited in Huang 1997)
Mandarin Chinese	Verb-second	High; rigid word order (Huang and Chui 1997)
Indonesian	Verb-second	Moderate (10% variability of word order, Wouk 2004)
Bikol	V-initial	Moderate
Japanese	Verb-final	Low; 73.2% zero anaphora (Chen 1986, cited in Huang 1997)

In the next sections, we shall examine the organization of repair in Cebuano and Tsou, respectively. Conclusions will be drawn in the final section. In the entirety of this paper, we shall refer to the repaired segment, or the segment of talk where difficulty occurs, as the Trouble Source. The repairing segment, or the stretch of utterance where normal speech resumes, is called the Repair. Moreover, Verb Complex refers to the main verb together with all the other pre-verb particles, as in the emboldened portion in (1); in (1a) below, the negator *dai* and the other aspectual clitic *pa*, both pre-verbal particles, form a verb complex together with the main verb. Verb Phrase refers to the verb and its object, as in the emboldened portion in (2); in each examples in (2), the verb and its oblique-marked object together form a verb phrase. Verb Clause refers to the verb and the subject that comes before it, as in English and Indonesian. In (3), the pronominal subject and the verb form a verb clause.

(1) Verb complex

a. Bikol

dai **=*pa*** ***nag-*** ***uli'*** *si* *Julie*
 NEG yet AF come.home TOP PN
 'Julie hasn't come home yet.' (Fincke 1999:254)

b. (Tsou)

i-ko *n'a cohivi* *na ina atuhcu sngUsngUyo*
 AUX.NAF-2SG.GEN still know.LF FIL NOM main PN
 'Do you know (where) SngUsnguyo (is) mainly (located)?'

(2) Verb phrase

a. Cebuano

...pero naa =na =ka-y mga barkada- mga barkada nimo
 but EXIST PFV 1SG.NOM-OBL PL friend PL friend 2SG.GEN
 '...but you already have friends- your friends?'

b. Tsou

..eh- maezo ya-onko ho unto no enca..
 FIL also.AF have-name when movement OBL say.PF
 'In the movement, (his) name was also (on the list).'

Lit. 'The movement also had his name.'

(3) Verb clause

Indonesian

jadi kita ngelua- kita juga ngeluarin konsumsi
 so 1PL.NOM pay 1PL.NOM also paid.for food
 'So we pai- we also paid for the food.' (Wouk 2005:72)

2. Repair in Cebuano

Cebuano, a predicate-initial and a Meso-Philippine language (Mosley & Asher 1994), is one of the major languages in the Philippines, spoken as a first language by approximately a fifth of the total population, mainly on the central Visayan islands of Cebu, Bohol, Negros, Leyte, and on the northeastern half of Mindanao. It is spoken by the rest of the population of the Visayas and Mindanao areas as a second language. Cebuano is characterized by a highly developed focus system, common in Philippine-type languages. Case marking in Cebuano is shown in Table 2. Oblique here would include the non-topical argument in an AF⁴ clause (i.e., object marker) and Instruments.

⁴ Abbreviations used in the glosses:

1SG-1st person singular;
 2SG-2nd person singular;
 3SG-3rd person singular;
 AF-Agent focus marker;
 AUX-Auxiliary verb;
 EMPH-Emphasis marker;
 FIL-Pause Filler;

1PL-1st person plural;
 2PL-2nd person plural;
 3PL-3rd person plural;
 ASP-Aspect marker;
 COMP-Complementizer;
 EVI-Evidential marker;
 FS-False start;

Table 2: Cebuano case markers (Himmelman 2005)

	Personal name marker		Non-personal phrase marker	
Nominative	<i>si</i>	Specific (article)	<i>ang</i>	
Possessive	<i>ni</i>	Oblique specific	<i>sa</i>	
Dative	<i>kang</i>	Oblique non-specific	<i>ug</i>	

Payne’s (1994) study on Cebuano shows that there are passive clauses in the language, wherein Os precede As which are non-topical and are either marked as oblique or simply omitted in PF clauses, as in (4). Therefore, based on the order of the A and O phrases in Cebuano PF clauses, these PF clauses are splitting into two distinct constructions: the active PF clause construction and the passive construction (cf. Croft 2001).

(4) Cebuano (Payne 1994)

Gi-laylay *si Rayna Esmeralda sa usa ka sakit*
 PFV-afflict SI queen PN LOC one LK sickness
 ‘Queen Esmeralda was stricken by a sickness.’

Si Totong gi-ila nga labi-ng hawod sa dama
 SI PN PFV-identify LK more-LK best OBL game
 ‘Toto is known to be the best at the game of dama.’

Cebuano clauses have a loosely-organized syntactic structure in discourse; there is a moderate frequency of non-overt arguments. Based on the count of two conversational texts totaling 55 minutes, the lone argument in AF clauses is missing 43 percent of the time. In PF clauses, one argument is non-overt in 57 percent of the total number of clauses and both arguments are missing 13 percent of the time. The Cebuano data include five face-to-face conversations between acquaintances with a total length of 2 hours, 26 minutes and 53 seconds. A total of 494 repairs are observed.

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- | | |
|------------------------------|-----------------------------|
| FUT-Future tense marker; | GEN-Genitive case marker; |
| HAB-Habitual marker; | LF-Locative focus marker; |
| LK-Linker; | LOC-Location; |
| NAF-Non-Agent focus marker; | NEG-Negative marker; |
| NOM-Nominative case marker; | OBL-Oblique case marker; |
| PRT-Particle; | PF-Patient focus marker; |
| PFV-Perfective marker; | PH-Placeholder; |
| PL-Plural marker; | PN-Proper noun; |
| POSS-Possessive case marker; | Q-Question marker; |
| RECIP-Reciprocal marker; | REL-Relative clause marker; |
| RT-Reactive token. | |

Like most Austronesian verbs, the Cebuano verb is composed of a verb root and an affix, which may denote focus, tense, mood, and aspect. As observed in our data, in verbs, the trouble source almost always occurs on the verb root. In this case, the speaker may recycle the prefix (N=99), as in (5), or use a placeholder strategy instead of recycling the prefix (N=6), as in (6). Placeholders are particles used to keep a turn from being taken by another party, while the speaker is in the process of word search. Placeholder particles in Cebuano include semantically empty words, such as *kuan* and *kanang*.

(5) Recycling of verbal prefix

pag-thirty-plus =na =ka=
 when-thirty-plus PFV 2SG.NOM
lisod =na =daw ***mag-buntis-*** ***mang-anak***
 difficult PFV EVID AF-get.pregnant AF-give.birth
 ‘if you’re already more than thirty, it’s difficult to get pregnant- to give birth.’

(6) Use of placeholder strategy

J: *didto* =na *sa manila trabaho* =na =ko *didto*
 there PFV LOC PN work PFV 1SG.NOM there
 L: *nag-trabaho* ...*di di wa* =na =*diay* =ka *didto*
 AF-work DM DM NEG PFV EVID 2SG.NOM there
nag-kuan- ***tugpo***
 AF-PH reside
 J: there in Manila, I was working there already.
 L: working, ...then- then you’re not *kuan* residing there (in Cebu) anymore?

The overwhelming proportion of repair in Cebuano verbs that recycle the prefix shows evidence of the verb (root and affix) as forming a constituent in Cebuano, as shown in Table 3.

Table 3: Repair in Cebuano verbs (N=105)

Repair \ Trouble Site	V prefix	V root
V prefix	-	99
V root		6

It is also possible that the problem site would occur on the verb affix, but AF verb prefixes are not usually problematic. In rare cases where a suffix is involved, the repair usually starts from the verb root, then the suffix, again showing the fact that the verb affix and the verb root form a constituent, as in (7) and (8) below. In (7) and (6) above,

the placeholder *kuan* is mainly holding the turn for word search. In (8), an affix is attached to the placeholder reflecting the fact that a non-Agent focus clause is deployed. In these examples, the main trouble still lies in searching for the appropriate verb root. We were also not able to find any utterance trouble occurring in verb suffixes, meaning again that the trouble mainly lies in the verb root.

(7) Repair involving a suffix

unsa imong phone number
 what 1SG.POSS phone.number
unya kuan tawag-an =dayon =ka sa balay
 DM PH call-LF then 2SG.NOM LOC house
 ‘What is your telephone number, (you give it to them and) then *kuan* they will call you at home.’

(8) Repair involving a suffix

kuan-on =ra =ko =niya
 PH-PF only 1SG.NOM 3SG.GEN
taga-an =ko =niya-g allowance kada buwan
 give-LF 1SG.NOM 3SG.GEN-OBL allowance every month
 ‘He will just *kuan* me- he will just give me my allowance every month.’

Repair in Cebuano also shows evidence that the verb complex forms a constituent in the language. As mentioned, the verb complex contains the verb or the main predicate and all the other elements and particles preceding it. In simplified terms, the Cebuano verb complex is represented as follows:

(9) First element =clitic (+ other particles) + main verb

wherein the first element may be a negation or existential verb, a question word, a connector, a location, or a temporal adverb. Most of the time, the problem site would occur on the first element. At other times, the problem site occurs on the clitic and repair would still start at the first element, displaying a constituent that consists of the predicate (or verb) and the clitic that attaches to it (which will be discussed later in this section). When the problem site occurs on the verb, the repair may start at the first element, showing verb complex constituent, as in both instances in (10) below, or the repair would only recycle the verb affix, showing verb constituent (which is a constituent formed by a verb root and its prefix, as already discussed above). In both examples below, the trouble occurs on the verb root, but each of the speakers engaged in repair opts to recycle the first element of the entire verb complex.

(10) Recycling of first element in verb clause

ma- ma-dili =ka ma- ma-guol maka-sabot =ka sa tanan
 AF AF NEG 2SG.NOM AF AF-sad AF.understand 2SG.NOM OBL all
a= ambot lang labad imong ulo
 FIL dunno only ache 2SG.POSS head
 ‘(you) feel- uh- you won’t feel- feel sad (since) you can understand
 everything. Uh- I dunno, you’ll just get a headache.’

J: *sa Cotabato didto =na =ko nag-dako didto =ko*
 LOC PN there PFV 1SG.NOM AF-grow.up there 1SG.NOM
nag- didto =ko nag-eskuwela gyud- didto =ko nig-
 AF there 1SG.NOM AF-study EMPH there 1SG.NOM FS

L: *didto =na =dyud =ka nag-dako*
 there PFV EMPH 2SG.NOM AF-grow.up

J: in Cotabato, I grew up there, there I-, I studied there, I-

L: you grew up there.

There are two main forms of repair in Cebuano verb complexes: recycling (N=143) and replacement (N=45). Recycling mainly involves the first element, including negators, existential verbs, connectors, question words, and temporal adverbs, as shown in the examples above. Recycling of the first element is also shown in instances where the trouble site occurs on the clitic pronoun, thereby displaying a constituent that consists of the predicate (or verb) and the clitic that attaches to it. Replacement includes modifications and local reformulations of the first element, which can be any particle or the main predicate/verb, as in the second line in (11) below, and instances wherein the trouble source occurs on the main predicate or the main verb, as in (12) and the first line in (11). In (11), the main predicate *single* is repaired locally; in the second line, the first element, a negative particle *di-*, is recycled. In (12), the main predicate is repaired locally. Further below, Table 4 summarizes the types of repair involving the verb complex.

(11) Modification of first element

L: *unsa sing- single =pa =ka*
 what FS single still 2SG.NOM

T: *di- di =na single day\ wala =na- bali- e- e-*
 NEG NEG PFV single VOC NEG PFV PRT FIL FIL
single =na =pud sabihin
 single PFV also say
kay wa =na =man =ko-y bana
 because NEG PFV PRT 1SG.NOM-OBL husband

L: what are you? Are you still sing- single?

T: no- no, I'm not single anymore, (my girl), I don't- uh-, but you can say I'm single again, because I don't have a husband anymore.

(12) Local replacement of main predicate

kag- ka- kahibawo =*ko* *mag-bisaya* *pero*
 FS FS know 1SG.NOM AF-speak.visayan but
 'I- I- I know how to speak Visayan, but ...'

Table 4: Repair in Cebuano verb complexes (N=188)

Trouble Site	1st Element of Clause	clitic	Verb/ Predicate	Post V Elements (Verb completed)
Recycling of 1st Element of Clause	77 (recycling)	23 (V-clitic Constituent)	34 (V-complex Constituent)	9
Replacement	11	-	28 (local 'lexical' replacement)	6 (post-V NPs, but not necessarily; may be within Verb complex)

Recycling is also attested in overlaps, a common occurrence in conversation, where one of the interlocutors is forced to make a repair by recycling a previous utterance that was cut off due to the overlap. An example is illustrated in (13) below. Before T can finish asking another question (in line 3), W has started to answer the first question (line 2), but sensed that T must have wanted to rephrase that first question (in line 1) and so stopped. T thought she had been interrupted and wanted to make herself clear if in case W had not heard her since he was also trying to say something, and so recycled the start of her utterance (line 3).

(13) Repair caused by overlap

T: *pila* *ma-y* *sweldo*
 how.much PRT-NOM salary
 W: [*dili*]
 NEG
 T: [*da-*] *dako* *ba-g* *dipirinsya/*
 huge Q-NOM difference
 T: How much is the salary?
 W: [No]
 T: [Is the-] Is the difference big?

Recycling in constituents consisting of the first element (usually the predicate or the main verb) and the clitic that attaches to it involves a trouble source occurring on the second-position pronominal clitic as in (14a), or it also occurs when the speaker needs to change the pronominal clitic even if the sentence has progressed beyond the clitic position, as in (14b) and (14c). In such cases, the repair would always recycle the first element preceding the clitic, and not recycle only the clitic.

- (14) a. *dili=kayo- di=mi magka-sinabot*
 NEG=very NEG=1PL.NOM AF.RECIP-understand
 ‘(It’s) not very- we don’t understand each other.’
- b. *a= pero dili- dili- dili=kaayo=ka- kuan- dili=siya pro- progressive*
 FIL but NEG NEG NEG=very=2PL.NOM PH NEG=3SG.NOM
 ‘But you’re not- you’re not- it’s not (a) progressive (area).’
- c. *diri=mo nag- a- diri=ra=ka nag-apply or ...*
 here=2 PL.NOMP AF FIL here=only=2SG.NOM AF-apply or
 ‘You (pl.) (did something) here... you (sg.) applied here...’

The Cebuano NP consists of the head noun and all the possible markers that precede it. The markers that may come before a head noun, including modifiers, numerals, possessor pronouns, determiner *ang*, case marker *sa*, plural marker *mga*, are shown in Table 5. Although a maximum number of five markers can mark an NP, there is usually only one marker—at most two—in actual discourse.

Table 5: Cebuano noun phrase

<i>ang</i>		Possessor	Num <i>ka</i>	Modifier	Linker <i>nga</i>	Noun
Dem Pron	<i>sa</i>		Plural <i>mga</i>			
			<i>mga</i>			

Repair in NPs comes in three different types, namely, replacement, recycling, and use of placeholder strategy. Replacement (N=23) refers to local replacement of the pre-head noun element, a marker or the head noun, as in (15). In (15), T is showing L a picture of her children. At first she uses a plural marker *mga* to refer to her children. Then she shifts to a first person singular possessive *akong* to emphasize that the children in the picture are *her* children. This is an example of a repair and could not be a multiple noun marker, since from Table 5, the plural marker *mga* cannot precede a possessor pronoun. But on second thought, she makes a repair for the second time by using a first person plural possessive *among* to include her husband as one of the “possessors” of the children in the picture. The repair is made locally before the head noun is uttered.

(15) Local replacement in NPs

- T: *eto mga- akong- among anak o*
 this PL 1SG.POSS 1PL.POSS child DM
- L: *a= cute*
 INTERJ cute
- T: here, these are- my- our children, see.
 L: oh! (they're) cute.

Recycling (N=146) is starting all over from the marker or the addition of more markers regardless of whether the trouble site occurs at the marker or at the head noun, as in (16), where the speaker is word-searching for the name of a restaurant in line 2 (*diri sa= unsa*), and makes a repair by recycling back to the first element (*diri*) of the locative NP in line 3 and adds another particle *ra*. Recycling to the first element of the noun phrase is the commonest type of repair in NPs and attests to the constituent noun phrase in Cebuano.

(16) Recycling in NPs

- so= nag- nag-invite nga= ...ma-ngaon@@@*
 so AF AF-invite LK AF-eat
- kaon =kuno =mi diri sa= unsa to nga=*
 eat EVID 1PL.NOM here LOC what that LK
- basta diri ra sa Taipei*
 PRT here only LOC PN
- 'So (he) invited (me) to dinner, (he said) we're going to eat here at a- what was that place called- , (it was) just here in Taipei.'

The placeholder strategy (N=28) refers to the use of placeholders, which, as previously mentioned, holds a turn during word search, as in (17). In (17), both T and L are making repairs using placeholders. In line 2 of T, she uses the placeholder *ano* to hold her turn while searching for the appropriate word. L's answer also makes use of another placeholder *kuan* as she tries to maintain her turn while searching for the right word to use.

(17) Use of placeholder strategy in NP repair

- T: *unya pag-human ani*
 DM PAG-finish this
- wa =na =ka-y lain-g- ano- trabaho-on*
 NEG PFV 2SG.NOM-OBL other-LK PH work-PF

L: *wala =na\ kani =ra =siya akong kuan part time*
 NEG PFV this only 3SG.NOM 1SG.POSS PH part-time job
 T: then, after you're off from here, you don't have any other work to do?
 L: no more, this is my only part-time job.

Table 6 below shows the organization of repair in Cebuano NPs.

Table 6: Repair in Cebuano noun phrases (N=201)

Repair \ Trouble Site	Marker	Noun
Pre-Marker Particle	-	4 (addition of demonstratives and modifiers)
Marker	27 14 (marker replaced) 13 (local recycling)	105 (noun constituent)
Noun		65 9 (replacement) 28 (local recycling) 28 (placeholder strategy)

The organization of repair in Cebuano can be summarized as follows:

- i. When the trouble site is at pre-verbal position (usually at first element), repair occurs in verbal complex;
- ii. When the trouble site involves a pronominal clitic, repair occurs at the predicate/verb to which the clitic attaches;
- iii. When the trouble site is at a verb prefix or a verb root, repair usually occurs at the verb prefix, attesting to verb as a constituent; and
- iv. When the trouble site is at NP, repair usually occurs within the same constituent (and not beyond it).

From the observations made above, it can be said that repair in Cebuano is syntactically restricted, that is, repair in Cebuano is organized according to the kinds of constituents that have emerged and stabilized in the language, as schematized in (18). As shown in (18), four types of constituents emerge in Cebuano through repair. First, the verb complex, represented as **[[Pred=clit] pre-verb particles [pfx root]_{MAIN VERB}]** in the schema in (18), is a constituent consisting of the main verb and all the elements and particles that come before it. Repair of any utterance trouble occurring within this constituent would almost always start at the first element, as stated in (i) above.

[Pred=clit] is a constituent consisting of a predicate/verb and the pronominal

clitic that attaches to it. Repair of an utterance trouble occurring at the clitic would usually involve recycling of the Predicate, as stated in (ii) above.

The main verb, represented as **[pfx root]_V**, is a constituent consisting of the verb root and its focus marker, usually a prefix. Repair of an utterance trouble occurring at the root verb would usually involve recycling of the verb prefix, as stated in (iii) above.

The noun phrase, represented as **[markers N]_{NP}** in (18), is a constituent consisting of the head noun and all the markers preceding it. Repair of an utterance trouble occurring at the head noun would usually recycle the first marker of the noun, as stated in (iv) above.

- (18) Constituents in Cebuano
[[Pred-clit] pre-verb particles **[pfx root]_V**_{V complex} **[markers N]_{NP}** ...

Inconsistency of clause structure and high frequency of non-overt arguments in Cebuano make it difficult for speakers to use the clause as a category for recycling, just as in Bikol. It has thus been shown that both languages display similar patterns of repair. Tsou, as will be illustrated in the next section, despite its being a V-initial Austronesian language, has a relatively more rigid word order. However, it does not organize repair as in English, but tends to repair locally at constituent-initial position.

3. Repair in Tsou

Tsou is a VOS language spoken in the mountain area of Jiāyì County in southwestern Taiwan. Based on corpus data, word order in Tsou is fairly fixed (S. Huang, Su & Sung 2001), except for some tokens of topicalization, which causes a topicalized NP to be moved to a clause-initial position. The configuration of each constituent is illustrated below:

- (19) Tsou (SngUsngUyo 24)
- | | | | | | | | |
|--|----------------|------------|--|---------------|-----------|-----------|--------------|
| <i>mi-mza</i> | <i>asngUcU</i> | <i>yon</i> | <i>to</i> | <i>sohngu</i> | <i>ci</i> | <i>la</i> | <i>yon-i</i> |
| AUX.AF-1P.NOM | always.AF | stay.AF | OBL | rain.shelter | REL | HAB | stay-LF |
| ┌────────┐ | ┌────────┐ | ┌────────┐ | ┌──┐ | | | | |
| Auxiliary | Adverb | Verb | NP | | | | |
| └──┘ | | | └──┘ | | | | |
| Verb Complex | | | NP | | | | |
| ‘We always live in the house.’ | | | | | | | |
| Lit. ‘We always live in the rain shelter.’ | | | (SngUsngUyo 24) | | | | |

As shown in (19), a Tsou clause usually consists of one full NP; the agent is usually marked with a pronominal indicator attaching to the auxiliary verb. A V-complex constituent is basically composed of an auxiliary verb and a verb, plus an adverb that optionally occurs before the verb, an evidential marker before the auxiliary verb, an aspectual marker, or a negator after the auxiliary verb, as illustrated in (20). As to the word order and structure of a complex NP, as in (20), the form is basically more like a normal indicative clause structure; that is, a clausal NP also has an auxiliary verb *te* and a main verb, and both appear with focus markers in the same order as in the verb complexes.

- (20) Tsou: Children 367
- | | | | | | | |
|--------------|-----------------|-----------|---------------|-----------|--------------|-------------|
| <i>'a</i> | <i>o-'u</i> | <i>cu</i> | <i>svUhti</i> | <i>'o</i> | <i>te-si</i> | <i>sofU</i> |
| EVI | AUX.NAF-1SG.GEN | ASP | measure.LF | NOM | FUT-3SG.GEN | roof |
| Verb Complex | | | | NP | | |
- ‘I have measured (the part which) will become a roof.’

Based on corpus observation, not only is the order of each phrasal constituent in Tsou clauses fairly fixed, the word order within every constituent, that is, the order of the aspectual marker, negator, and preverbal adverbial in verb complexes, or the case marker and noun in NPs, is also rigid. Since the morphological structure within every syntactic constituent is complicated, our discussion about the relation between repair and word order must touch on the issue about the word order within constituents.

Our data are collected from two conversations. One is a dialogue among three men, and another is a dialogue between a man and his wife. The total length of the data is 40 minutes and 53 seconds. There are 311 Tsou repairs observed.

Repairs in Tsou can be initiated by repetition or replacement. In corpus data, we notice that they are not restricted to clause-initial position.

- (21) Tsou (War: 131-132)
- M: *..zou*
- RT
- Y: .. *'ua-* *'ua* *i-si* *enca* *te-*
- EVI EVI AUX.NAF-3SG.GEN say.PF AUX.FUT
- ‘Yes, he is planning...’ lit. ‘Yes, he is saying...’
- O: *ahyo-* *ahyoyocU* *na* *yupasU*
- FS well.prepared.AF NOM money
- ‘The money has been prepared.’

In (21), turns quickly shift between the three speakers. Speaker Y initiates a repair by a repetition of the first utterance in turn-initial position. After being sure that he has succeeded in holding his turn, he restarts and completes what he has wanted to say. The same is true for speaker O. Y starts with an evidential marker *'ua*, which usually occurs in clause-initial position, and O starts with a verb. In Tsou, verbs are usually located to the right of auxiliary verbs, aspect markers, and negators. Here, since contextual information clearly defines the temporal and aspectual environment, the auxiliary verb is omitted. We consider this a local repair, since it is the first utterance in turn-initial position. However, more pieces of evidence illustrate that local repairs are the norm in Tsou. Consider excerpt (22).

- (22) (War 6-7)
- | | | | | | | | |
|----|-------------|--------------|-----------|--------------|----------------|-----------|------------------|
| .. | <i>'a</i> | <i>no</i> | <i>ʒo</i> | <i>eanca</i> | <i>mi-ko</i> | <i>la</i> | <i>mici-</i> |
| | EVI | FIL | because | say.PF | AUX.AF-2SG.NOM | LA | want.AF |
| .. | <i>m'e-</i> | <i>m'ene</i> | <i>ne</i> | <i>maaya</i> | <i>no-</i> | <i>na</i> | <i>ino peisu</i> |
| | FS | ask.AF | OBL | Japanese | OBL | FIL | OBL money |
- ‘(Every time he goes there) because (he) wants to ask for money from the Japanese.’ lit. ‘(Every time he goes there) It’s like you want to ask for money from the Japanese.’

There are two repairs in (22). The first trouble source occurs on the verb (*m'ene*). The speaker does not return to clause-initial position (*mi-ko* in the first line) but just recycles the verb *m'ene*. The second trouble source occurs in the following object noun. The speaker also repairs locally, using a pause filler (*na*) to hold his turn for word search. This repair is initiated at a case marker in an NP-initial position.

To understand to what extent word order affects repairs, based on corpus data, we constructed Table 7. In the light of the observed rigid word order for either constituents or elements within constituents in Tsou clauses, we constructed the table⁵ to demonstrate the distribution of repair in Tsou conversations.

⁵ A similar table would not be possible for Cebuano, as well as languages that do not have a rigid word order like Tsou.

Table 7: The distribution of repair in Tsou

Repair \ Trouble Site	Verb Complex					Noun Phrase			Total
	Pre A	Aux	Post A	Pre V	V	Pre-CM	Case M	Emb Cl Or N	
Pre-Aux	20	28	10	17	3	0	3	3	84
Aux	1	38	12	15	2	0	2	2	72
Post-Aux	0	0	6	1	0	0	0	0	7
Pre-V	0	0	0	28	2	0	2	0	32
V	0	0	0	0	30	0	4	0	34
Pre-Case M	0	0	0	0	0	1	0	1	2
Case Marker	0	1	0	0	0	0	50	18	69
Embedded cl/ N	0	0	0	0	0	0	0	11	11
Total	21	67	28	61	37	1	61	35	311

The figures marked in the shaded boxes denote that the repair is in the same position as the trouble source. There are 59.2 percent (184/311) of repairs initiated at the same site as the trouble source. Of the remaining instances, most of them are repairs initiated at a position prior to the trouble source.

The vast majority of repair (69.18 percent (229/331)) is initiated within the verb complex; of these 68.12 percent (156/229) are initiated in a sentence-initial position (i.e., pre-auxiliary elements and auxiliary verbs). Although repair occurs most often within the verb complex, which is the first constituent in a sentence, repair in Tsou tends not to occur in sentence-initial position. According to Table 7, 59.2 percent (184/311) of repairs occur at the same site as the trouble source, that is, in Tsou local repair occurs most frequently. In addition, 97 repairs occur within NPs, and 16.49 percent (16/97) of them recycle back to the verb complex to initiate repair. These data show that Tsou tends to repair within the same syntactic constituent.

Why does Tsou not recycle back to sentence-initial position? The answer can be ascribed to the complexity of the morphological structure within constituents. The following excerpt will illustrate this point.

- (23) (SngUsngUyo)
- 181 ... (0.8) *mi-cu amzo sUc'UhU. ancU mi-hin'i ahtu=*
 AUX.AF-ASP already arrive.AF not.yet AF-3PL.NOM ever
 'I have arrived, yet they....'
- 182 .. *asonU 'ancU mi-hin'i ahtu=*
 possible.AF not.yet AUX.AF -3PL.NOM ever
- 183 ... (1.0) *ahTu UmnU ci sootang na te-hin'i= mahafO.*
 ever good REL negotiation NOM FUT-3PL.NOM carry.AF
 'Those who wanted to pick me up were still negotiating. Therefore, I finally decided to walk.'

a case marker. This also suggests that the more choices there are within a constituent, the more likely it is for speakers to run into production problems.

To sum up, since Tsou word order is fairly fixed, its projectability is predicted to be higher than that of Japanese. However, conversational data show that Tsou frequently initiates local repairs, and the repairs usually recycle back to a position within the same phrasal constituent as the trouble sources. Tsou speakers spend more time searching for a suitable constituent, because there are multiple choices to fill up slots of elements within constituents, such as evidential markers, auxiliary verbs, aspectual markers, negators, adverbs, and verbs, in a verb complex, or of case markers in an NP. The relative order of elements is fairly fixed, but every element is optional. Since participants cannot easily project what element comes next within a constituent, participants need to make use of a ‘wait and see’ strategy, and speakers do not need to recycle back to sentence-initial position.

The various combinations of elements within a constituent in Tsou not only gives rise to low projectability, it also suggests why Tsou tends to repair locally. Moreover, the recurrent repairing patterns observed in Table 7 demonstrate a certain correspondence between interaction and grammatical distribution. As shown in Table 7, repairs tend to occur in constituent-initial position. In a verb complex, 68.12 percent (156/229) of repairs are initiated at verb complex-initial position (auxiliary verb and pre-auxiliary verb). In NP constituents, 51.5 percent (50/97) of repairs start with a case marker at NP-initial position, and only 16.49 percent (16/97) of repairs recycle to a previous constituent. These figures show that Tsou not only tends to repair locally, but also tends to repair at constituent-initial position. It is shown that in Tsou, a phrasal constituent also tends to be an entrenched processing unit in interaction.

4. Summary and conclusion

Based on the results of our study on Tsou and Cebuano, the organization of repair is influenced by three key factors: constituency, consistency of clause structure (Fincke 1999), and the position of the verb. The position of the verb in a clause implies early projectability (Fox, Hayashi & Jasperson 1996). In languages where the verb is positioned early in the clause, repair can be done either by clausal or by local recycling. However, in a verb-final language, projection is made difficult by the position of the verb toward the end of the clause. There has been only one verb-final language investigated for repair until now, but we can predict that the repair behavior of other verb-final languages would pattern after Japanese, which mainly uses local recycling.

Consistency of word order is another factor that influences repair. In languages that have a rigid word order, that is, when consistency in a particular language is high,

speakers choose between clausal or local recycling. But in languages that have more flexible word order, or which allow the omission of arguments, then the use of local recycling is found more frequently.

As we have observed in Tsou and Cebuano, speakers tend to do local repairs within a constituent, which seems to be a frequently occurring, entrenched unit in interaction. For example, based on repair patterns, there is an SV (verb clause) constituent in English (cf. Table 8), which means that if trouble occurs at a subject position or a verb position, the speaker would most likely recycle to the beginning of the subject. If trouble occurs at an object position, the speaker would most likely recycle to the start of the object noun phrase, but not likely to an earlier position. The “Constituent” in interaction is emergent, as argued in Bybee (2002) and Ewing (2005) and therefore language-specific (see Table 8). There are Verbs and Noun Phrases in Tsou and Cebuano, with additional Verb Complex and Predicate- (or Verb-) Clitic in Cebuano. As earlier mentioned, English has Subject-Verb, Object, and Prepositional Phrase constituents (cf. Fox & Jaspersen 1995). Indonesian has Verb-Object constituent (cf. Wouk 2004); and Bikol has Verb Complex, Predicate- (or Verb-) Clitic, and Prepositional Phrase constituents (cf. Fincke 1999). Although the studies on Bikol and Indonesian did not directly mention the Constituent as a factor in repair patterns, they did allude to the constituent as a production unit that defines a repairing site, as well as an entrenched processing unit in interaction. Table 8 below shows the Constituents that are present in the languages that have been investigated so far, based on their repair patterns.

Table 8: Summary of observations

	Case frame	Consistency	Constituents
English	Verb-second	High	SV, O, PP
Mandarin	Verb-second	High	SV, AdvV, ModalV, VO, O
Tsou	V-initial	High	VComp, NP
Cebuano	V-initial	Moderate	VComp, V-clitic, V, NP
Bikol	V-initial	Moderate	VComp, V-clitic, PP
Indonesian	Verb-second	Moderate	VComp, VP
Japanese	Verb-final	Low	V, PP, NP

Moreover, as can be observed in Table 8, the verb in both English and Tsou comes early in the clause, and both have rigid clause structures. However, while English makes use of clausal recycling (S-V), Tsou employs local recycling. It is conjectured that the verb in English consists of a simpler structure (i.e., auxiliary verb plus a main verb) than Tsou, which has a verb complex (i.e., a main verb plus several pre-verbal elements) containing several choices in each pre-verb slots; therefore English speakers are found to recycle more frequently to elements beyond the verb, i.e., the clause subject, in English.

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[Received 15 March 2005; revised 30 August 2005; accepted 7 September 2005]

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動詞在句首語言之修補現象

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本文以分析 Cebuano 語與鄒語言談語料，探討詞序以動詞為首語言之修補現象與該語言語法結構間的關係。

Fox, Hayashi & Jaspersen (1996) 的研究顯示，英語與日語言談語句中各詞組排列順序規律與否影響其修補現象的呈現。英語為 SVO 語言，自然語料中其語句內詞序排列方式相當一致，說話者修補時傾向於由句首開始。日語為 SOV，其語句內詞序排列較為鬆散，說話者修補時則傾向於修補因問題產生中斷的詞組，而不回到句首。然而 Fincke (1998) 針對菲律賓呂宋島南部 Bikol 語的研究，以及 Wouk (2004) 對 Indonesian 語修補現象研究顯示各語言的修補現象與句法之間的關連不盡如 Fox 等人研究所預期。

Cebuano 語與鄒語同為動詞在句首的語言，其修補現象呈現不同樣貌。Cebuano 語句型結構組成成分多樣複雜，言談中主要論元不出現的頻率極高，說話者傾向在言談問題發生的詞組做修補。而在鄒語的言談語句，詞序規律性高，但與英語不同的是，鄒語說話者也傾向在問題發生的詞組做修補。我們綜合各語言的修補現象歸納出，詞序排列規律性雖能影響修補現象的形成，各詞組內部構詞或句法結構的複雜性越高，說話者進行立即性修補的可能性越大，也因此造成各語言修補模式的不同。

關鍵詞：修補現象，動詞在句首語言，Cebuano 語，鄒語，詞序，詞組結構

