

Unit 7-2 Japanese English at the university level: Dysfluency analysis in spoken English

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1. Introduction

The purpose of this unit is (1) to show what kind of self-repairing strategies are frequently observed through the analysis of the Japanese EFL learners' spoken corpus; and (2) to suggest one method of analysis by extracting learner chunks.

2. Data and Method

2.1. The categorization of self-repairing strategies

We categorized learner self-repairing strategies into four: 'cutoff,' 'repeat,' 'repair,' and 'reformulation' based on previous studies (e.g., Maclay and Osgood, 1959; Levelt, 1983; Green and Hecht, 1993; Olynak et al., 1990; see Appendix 1). Although the previous research was conducted based on more elaborate definition of each category, we needed to make our classification as simple as possible to minimize disagreement between the coders.

Each self-repairing strategy consists of three parts: 'the first utterance,' 'editing term,' and 'the second utterance' (see Levelt 1983). 'The first utterance' is followed by 'the editing term' and then 'the second utterance.'

1. The first utterance: the utterance to be modified

2. The editing phase:

- 2.1. Without a pause
- 2.2. A silent pause
- 2.3. A filled pause

- 2. 3.1. Non-lexical Fillers (e.g., uh, ah, um)
- 2. 3.2. Lexical Fillers (e.g., well, I mean, that is)
- 2. 3.3. Drawls (definition: a way of speaking in which vowels are longer than normal; e.g., a:::i[I], tu::: [to])
- 2. 3.4. Addition of Unnecessary Vowels (definition: Adding the unnecessary vowel sound to the word-final consonant (e.g., I findoo, I think thatoo))

3. **The second utterance:** the self-repairing utterance

3.1. **cutoff:** Only the initial part of the word is pronounced before the whole word is pronounced.

e.g., li . . . literature, bu . . .but, be . . . because

3.2. **repeat:**

The word is repeated without any additional elements.

e.g., . . . went to the movies, movies.

The word is repeated with some additional elements.

e.g., I . . .I like music, I like . . . I like music,

The chunk is repeated without any additional elements.

e.g., I did it. I did it.

The chunk is repeated with some additional elements.

e.g., I have to . . .I have to go there

3.3. **repair:**

One word is modified (replaced)

e.g., I am . . . was sad, I get . . . got nervous, at my . . . her house

The whole chunk is modified

e.g., one year . . . almost one year, I'm . . . maybe I'm greedy

Part of the chunk is modified (replaced)

e.g., at her house . . . at my home

3.4. **reformulation:**

The previous statement is retracted and a new sequence of words is produced.

e.g., I took . . . uh . . . it took me one hour
 did you go . . . uh . . . was that a good movie?

2.2. Tagset used in this study

Table 1 below shows the tagset for self-repairing strategies.

Table 1. The tagset for self-repairing strategies

repairing strategies	<cut></cut>	cutoff	120
	<repeat></repeat>	repeat	838
	<repair></repair>	repair	567
	<reform></reform>	reformulation	71
			1596

2.3. Research questions

- 1) Among the self-repairing strategies, i.e., ‘cutoff,’ ‘repetition,’ ‘repair,’ and ‘reformulation,’ which was most frequently used in the corpus?
- 2) How many self-repairing strategies did learners produce in one interview?
- 3) Is the frequency of these self-repairing strategies is related to the level of the learners?
- 4) What is the relationship between the self-repairing strategies and the editing term, i.e., without a pause, silent pause, and filled pause?

3. Results

3.1. The breakdown of self-repairing strategies

Figure 1 indicates that the most-frequently used strategy was ‘repeat’ (53%), followed by ‘repair’ (35%), ‘cutoff’ (8%), and ‘reformulation’ (4%).

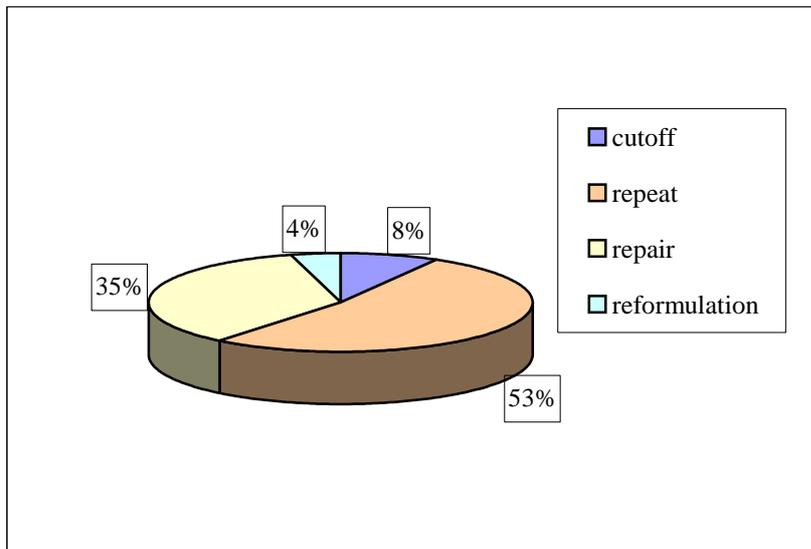


Figure 1. The breakdown of self-repairing strategies (n=1,596)

3.2. The mean frequency of self-repairing strategies per learner

As in Figure 2, learners used the 'repeat' most frequently in terms of the mean frequency of self-repairing strategies.

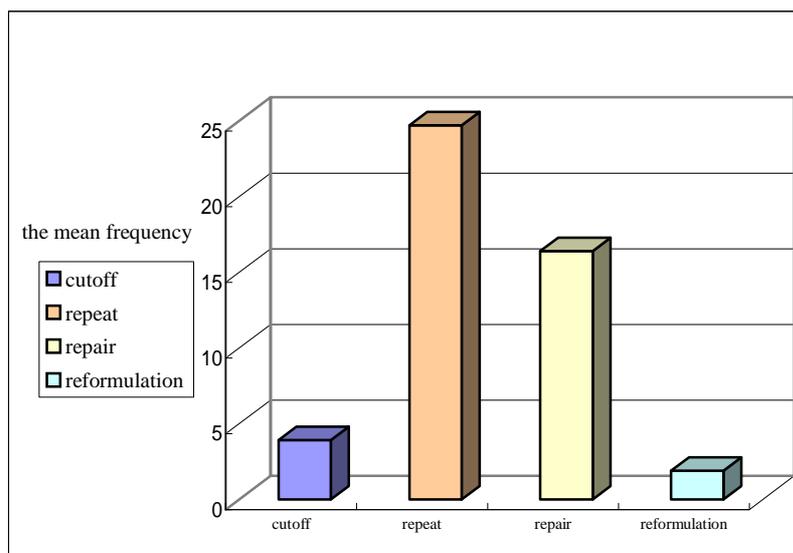


Figure 2. The mean frequency of self-repairing strategies per learner

3.3. Self-repairing strategies and the level of learners

In Figure 3, there is a decrease in the number of frequency from the Level 5 to Level 9 (the highest level) except for Level 8. The reason for the increase at level 8 is due in part to the small number of the learners.

The figure also shows that the learners at Level 4 used less self-repairing strategies than learners at Level 5. The reason being is that although the data was converted into the number per 100 words, the learners at Level 4 produced fewer words in total.

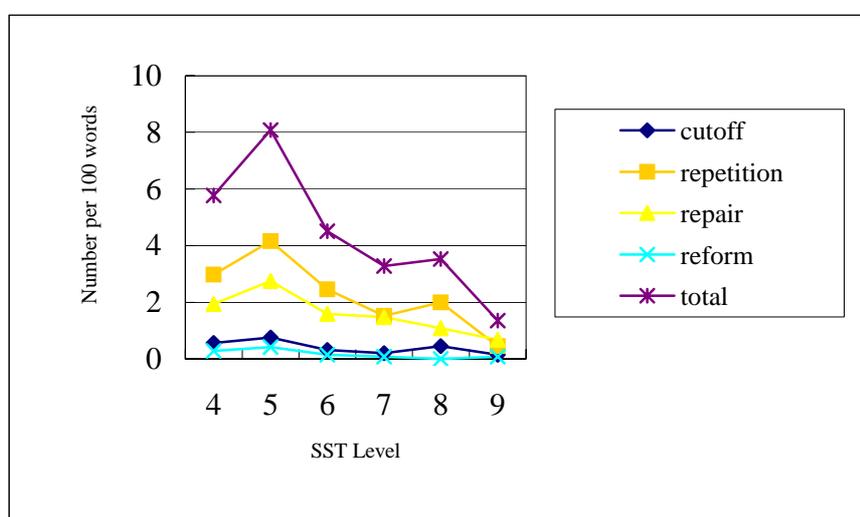


Figure 3. Self-repairing strategies and the level of learners

3.4. The relationship between the self-repairing strategies and the editing term

Learners showed some variation in the choice of editing term before they resorted to self-repairing strategies, as is seen in Table 2 and Figure 4.

The most frequently used pattern was [without a pause---repeat] (460), followed by [without a pause---repair](318). In the data there were three cells containing no examples.

As for the 'repeat', [without a pause---repeat] and [non-lexical fillers---repeat] amounted to about 85 % of the total. Similarly, in the 'repair', these two patterns reached 90%. On the other hand, in the reformulation,

[reformulation---non-lexical fillers] occurred slightly more than [reformulation---without a pause].

From this limited amount of data, we can conclude that there may be some preferred patterns in terms of editing term and self-repairing strategies.

Table 2. Self-repairing strategies X Editing Term frequency table

	Cutoff	Repeat	Repair	Reformulation	
Without a Pause	99	460	318	25	
A Silent Pause	2	71	26	2	
A Filled Pause	Non-lexical Fillers	15	168	128	28
	Lexical Fillers	1	4	9	0
	Drawls	1	28	6	0
	Unnecessary Vowels	0	9	6	2
Total	118	740	493	57	

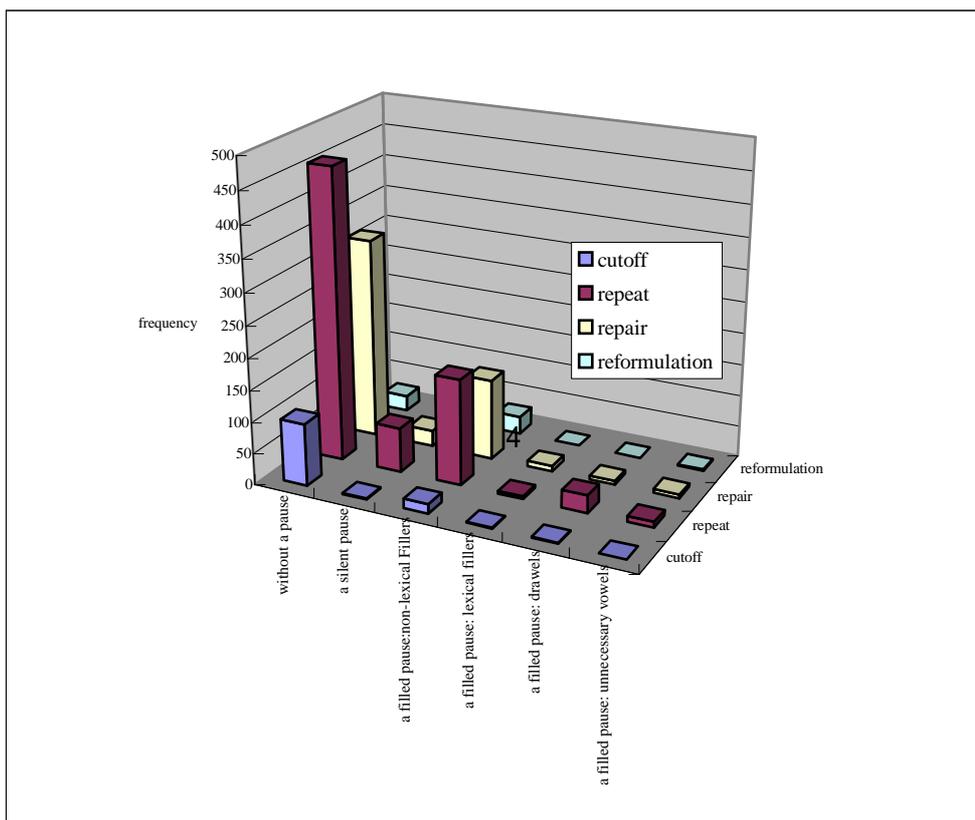


Figure 4. Self-repairing strategies X Editing Term frequency figure

4. Conclusion

We will conclude this study by answering each research question we posited.

1) Among the self-repairing strategies, i.e., ‘cutoff,’ ‘repetition,’ ‘repair,’ and ‘reformulation,’ which was most frequently used in the corpus?

All the instances of self-repairing strategies totaled 1596. The most-frequently used item was repeat (53%), followed by repair (35%), cutoff (8%), reformulation (4%).

2) How many self-repairing strategies did learners produce in one interview?

The learners in this study used the ‘repeat’ most frequently in terms of the mean frequency. In this study thirty subjects took a 15-minute oral interview test. We divided the total number of ‘repeat,’ for instance, by thirty. As a result, on average one learner used ‘cutoff’ about 4 times, ‘repeat’ 25 times, ‘repair’ 16 times, and ‘reformulation’ twice. Again we can say that learners used ‘repeat’ far more frequently than any other item.

3) Is the frequency of these self-repairing strategies related to the level of the learner?

The subjects in this study range from Level 4 to Level 9. Level 9 is the highest level. There were 13 subjects at Level 4, three subjects at Level 5, eight subjects at Level 6, four subjects at Level 7, one subject at Level 8, and one subject at Level 9.

We can see a fairly gradual decrease in the frequency from the Level 5 to Level 9 except for Level 8. The reason for the increase at Level 8 is due in part to the small number of the learners. We can also observe that learners at Level 4 used less self-repairing strategies than learners at Level 5. The reason may be that although the data was converted into the average number per 100 words, the learners at Level 4 produced fewer words in total.

4) What is the relationship between the self-repairing strategies and the editing term, i.e., without a pause, silent pause, and filled pause?

Learners showed some variation in the choice of editing phase before they resorted to ‘cutoff,’ ‘repeat,’ ‘repair’ and ‘reformulation.’ The most frequently used pattern was [without a pause---repeat] (460), followed by [without a pause---repair](318). In the data there were three cells containing no examples.

When we look at the ‘repeat,’ [without a pause---repeat] and [non-lexical fillers---repeat] amounted to about 85 % of the ‘repeat.’ Similarly, in the ‘repair,’ these two patterns reached 90%. On the other hand, in the ‘reformulation,’ [reformulation---non-lexical fillers] occurred slightly more than [reformulation---without a pause]. From this limited amount of data, we can conclude that there may be some preferred patterns in terms of editing phase and learner self-repairing strategies.

As a final note, the syntactic patterns we have examined so far are a reflection of potential learner chunks because learners who apparently had stored these patterns in their mind just imparted them when they were pressured to produce a piece of discourse.

Appendix 1 Examples of Self-repairing and Editing Term

Repeat-Drawls

computer is <F>er</F> at first, <F>er</F>a little</>difficult and complicated</>to <F>ur</F> control or <F>er</F> get <redart>the</redart> information, but <f>uh</F> once <F>er</F> <repeat>you</repeat> you</> have

Repeat-Unnecessary Vowels

at that time <repeat>I</repeat> I was wearing some protection around my body

Repair-Drawls

and <repeat>she</repeat> <repair>she want</repair>, <repeat>she <F>ah</F> she, she</repeat>, she wanted to <repair>buy</> some</repair> buy a present for her husband,

Repair-Unnecessary Vowels

I only use my computer <F>mm</F> <repeat>to</repeat> <F>mm</F> <repair>to make</repair> <F>mm</F> to do</> the E-mail.

Reformulation-Unnecessary Vowels

<reform>the food <F>ah</F> restaurant is </reform> <./> <F>mmm,mmm,ah</F>,
 <repeat>we</repeat>we will decide the restaurant after the movie.

Appendix 2: The frequency of each self-repairing strategy

Frequently used words for ‘cutoff’

item	frequency	examples
i	5	basically Shizuoka people <cut>i</cut>, <agr>is</agr> <eart>a</eart> same as <repair>Tokyo</repair>, Tokyo's people. <F>Ah</F>, but Shizuoka's people <agr>is</agr>,
wha	5	so she asked a <./> clerk <cut>wha</cut>, what kind of tie she should buy. And
An	4	<F>Uh-huh</F>. Yeah, <cut>an</cut> and, <repair>where di, di</repair>, where do you live now?
Li	3	I read the <F>mm, mm</F> books about art and <./> <cut>li</cut> <F>mm</F> literature <./> books. <A> Oh, wow. What kind of art are
Ex	3	Actually I <F>mh</F> didn't watch around carefully. The problem <cut>ex</cut> <pst>exist</pst> here. <F>Mm</F> Very
Be	3	One day last week we went to <./> a department store. <F>mmm</F> <cut>be</cut> because we <pst>want</pst> to <F>mmm </F> present
Bu	3	<F>Oh</F>, really? <F>Urmm</F>, <./> <cut>bu</cut>, <./> but <repair>I have no money because</repair>
A	3	<F>Oh</F>, yeah, <cut>a</cut>, <repeat>I</repeat>, <repeat>I try</repeat>, I try to cook omelette <A> <F>Ah</F>. These

Frequently used words for ‘repair’

item	f	examples
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the	7	after <@>it</@>, they enjoyed <repair>the</repair> their time, <F>um</F> they <./> left the zoo and
a	7	so I <pst>can</pst> play even if <repeat>I</repeat>, I <elex>was</elex> <repair>a</repair>, some equipment on the teeth.
I	7	<laughter>Fire</laughter>. <reform>We say</reform>, <repair>I</repair>, today I have <repair>a another</repair>, other <repeat>two</repeat>, two classes an
in	6	And <F>mm</F> I don't have any computers <repair>in</repair> at home, so I envy this person. <F>Um</F>.
is	5	yes, Juria, <./> in Chinese character, "Ju" <repair>is</repair> means pearl and he thought <repair>I should <./> be</repair> I should have
my	5	I have, I had to <emorph>been</emorph> absent from, <F>er</F>, <repair>my</repair>, one of my <-pl>class</-pl>. And,
she	5	he told her where <delpron>IT</delpron> is. And <repair>she</repair>, <./> finally she, <F>mm</F>, stepped up to <delart>THE</delart> third floors. That's all.
I'm	5	doesn't have a good quality, so <repair>I'm</repair>, maybe I'm greedy but <repair>I want some more</repair> I want <./> good
there is	4	and she <repair>want</repair>, wanted to eat something but <repair>there is</repair>, there were nothing to eat.
he	4	she took her <repeat>to the zoo</repeat> to the zoo by car then <repair>he</repair>, <repeat>they </repeat> <./> they <./> in the zoo <repair>they</repair> there are

Frequently used words for 'repeat'

item	<i>f</i>	examples
I	152	<F>Er</F>, when <repeat>I</repeat>, I <elex>often</elex> studied hard, I often, <F>er</F>, forgot eating, two or three

and	20	Because <repeat>I</repeat>, <./> <F>umm</F>, <./> I like eating <repeat>and</repeat>, <F>er</F>, <./> and, <F>er</F>, <./> I like also cooking, but <./> <repair>to
she	20	<./> so <repeat>she</repeat> <F>mm </F> she <repeat>use</repeat> <F>mm</F> <agr>use</agr> <F>mm</F> her computer now probably, <F>mm</F>
And	18	 <repeat>And</repeat>, <./> and, Chinese, Japanese, French, and Italian, <repeat>and</repeat>, <./> and so on.
he	14	And, <./> <F>mm</F>, <repeat>he</repeat>, he drank beer and his uncle drank, <./> I think <repeat>wine</repeat>, <F>mm</F>,
we	13	<reform>The fa</reform>, <./> <F>er</F>, <./> <F>er</F>, <./> because <repeat>we</repeat>, we gathered, <F>er</F>, <./> <?>the late morning</?>, <repeat>when</repeat>, when we <./> arrive
to	10	 So <nvs>laughter</nvs> I only use my computer <F>mm</F> <repeat>to</repeat> <F>mm</F> <repair>to make</repair> <F>mm</F> to do <./> the E-mail.
in	9	 One is <laughter>at the movie theater</laughter>, <./> <repeat>in</repeat>, in Sakura, and the other is <delprep>AT</delprep> <delart>THE</delart> coffee shop in
they	8	if <repeat>they</repeat>, they make <@>higher cost</@>, <F>er</F>, <./> <F>er</F>, <reform> most of the university
the	8	And, <./> <repeat>the</repeat>, <F>er</F>, <./> the content is <repeat>about</repeat>, <./> about hijack <repeat>in the, <./>
how	8	I <repair>want</repair> wanna go to New York and <./> <F>hmm</F> <repeat>how</repeat> how can I get the ticket to New York?
it	8	of Scotland, <@>becuase it</@>, <./> <repeat>I</repeat>, I think, it not, <F>er</F>, depend, <repeat>it</repeat>, <@> it was depends on England </@> I guess.

so	7	how much the volume of the curry, <repeat>so</repeat>, <F>er</F>, so <reform>I doesn't</reform>, the restaurant and I took lunch, <repeat>the, the</repeat>.
what	7	And, <F><JP>uun</JP></F> while she was walking, <repeat>she</repeat>, she thought, <F><JP>uun</JP></F> <repeat>what</repeat> <@>what was dinner the day</@>.
it's	7	I want to go <delobj>THERE</delobj>, but <F>mm</F> for this Christmas season, <repeat>it's</repeat>, it <pst>is</pst> very crowded at <delart>THE</delart> Tokyo Disneyland.
I, I	6	if, <F>er</F>, usual cold, <repeat>I, I</repeat>, I don't care for her, but today, <repair>she get very</repair>, <F>a</F>.
I want to	6	Of course <repeat>I want to</repeat>, <./> I wanted to present myself <repair>today's party</repair>, <delprep>TO</delprep> your
my	6	One day last week, <WO>I and, <F>er</F>, two of <repeat>my</repeat>, <F>er</F>, my friends </WO> <delcop>WERE</delcop> thinking about <repeat>where</repeat>, where we
So	6	<repeat>So</repeat>, <./> <F>umm</F>, <./> so I said <delpron>It</delpron> <delprep>TO</delprep> my friends and friends
But	6	<repeat>But</repeat>, <./> <F>a</F>, but, <F>er</F>, <reform>from</reform>, <F>a</F>, it takes one or two <-pl>hour</-pl>
I'm	6	So maybe <repeat>I</repeat> <repeat>I am</repeat>, <repeat>I am</repeat> <ellex>feared</ellex>, <repeat>I'm</repeat> I am <ellex>feared</ellex> of the plane unconsciously.

Some examples of 'reformulation'

item	examples
I	I think this picture agr>describe</agr> <F>uh</F> some party or <F>uh</F> restaurant<./> <reform>I</reform> <F>um</F> <repair>it looks very high class rest,
I	yeah, yeah, after that, <reform>I</reform>, <@>there is a lesson</@>, <A><F>Uh-huh</F>
it's	So <nvs>laughter</nvs> in spring holiday, <@><reform>it's</reform> I have to work</@>. <nvs>laughter</nvs>
I'm very	<F>Mm</F> <repeat>I'm very</repeat> <reform>I'm very</reform>, <repair>it's</repair> I think it's very fun to go to Kyoto. It
I've a	but nowadays <reform>I've a</reform>, <F>mm</F>, <./> it's a little bit troublesome, I think,
I'm a	I'm teaching English, so <nvs>laughter</nvs> <reform>I'm a</reform>, <./> <F>er</F>, that's not <cut>go</cut>, good,
There, there're	<F>Mhmm</F>. <./> <reform>There, there're</reform>, <F>er</F>, they offer us <./> a lot of <./> <JP>pans</JP> and
this is	<F>mm</F>, <reform>this is</reform> there is a very big house with lots of windows and
let's,	OK. And <reform>let's,</reform> <F>umm</F> do you have lunch? <F>Ah</F> <laughter>No</laughter>.
I don't	<F>Mmm</F> <reform>I don't</reform> <F>mm</F> I usually drive around <repair>my</repair> near my house so I
Rome is	I <pst>stay</pst> in Rome. So, <reform>Rome is</reform>, there <agr>is</agr> very old <-pl>building</-pl>.

Appendix 3: Syntactic patterns of repeat

Subject+verb	I'm	(file00015) <ellex>feared</ellex>, you get sleepy. So maybe <repeat>I</repeat> <repeat>I am</repeat>, <repeat>I am</repeat> <ellex>feared</ellex>, <repeat>I'm</repeat> I am <ellex>feared</ellex> of the plane unconsciously. </followup> </stage3> <stage4> <task>
Subject+verb	I have	(fileer29) Oh, yeah. </> This Christmas, <F>ah um</F> </> the </> December twentieth, <repeat>I have a</repeat> I have a dance party, so </> we change a
Subject+verb	I like	(er30) Takako where would you like to go with your boyfriend? <F>Um</F> <repeat>I like.</repeat> <F>mm</F> <F> I like French movies so <repeat>I</repeat> I often go to
Subject+verb	I want	(file00039) <F>Oh</F>, this is Hiroko speaking. <F>Oh</F>. <A> Yeah. <F>Ummm</F>. </> <repeat>I want to go, </> go to</repeat>, <F>er</F>, I want to </> go
Subject+have to	I have to	(file00012) it difficult? Yes. Just a little bit. <A> <F>Oh</F>. And <repeat>I have to</repeat>, I have to study mathematics. But I'm <nvs>laughter</nvs> <?>. <laughter>I
Verb+to	wanted to	(file00013) <F>mm</F> went to <eart>the</eart> <JP>depart</JP> and <repair>her</repair> <F>mm</F> <cut>she wan</cut> <F>mm</F> she <repeat>wanted to</repeat> </> <F>mm</F> <F>mm</F> wanted to buy </> <eart>the</eart> <F>mm</F> tie. So, she
Verb+article	bought a	(file00027e) you before? <F>mm</F> No. Not <delprep>TO</delprep> me but my mother <F>mm</F> <repeat>bought a</repeat> <F>mm</F> bought a <ellex>knit</ellex> <repeat>for</repeat> for knitting <F>urm</F> sweater and when
Conjunct+subject	if I	(file00012) me about the swimming society? <F>Mhmm</F>, <F>er</F>, </> <F>mm</F>, </> <F>er</F>, <repeat>if I</repeat>, </> if I want to swim everyday, I can swim everyday.
Conjunct+subject	when I	(file00022e) </> in Thailand. I really enjoyed <delobj>IT</delobj> and <F>yeah</F>. <repair>When you</repair> <F>um</F> <repeat>when I</repeat> </> when I <delcon>was</delcon> asked <repair>someone by</repair> by someone about living
Preposition+article	at the	(file00037) to be blamed <F>uh</F> you </> got my motorcycle <F>mm</F> </> broken <repeat>at the</repeat> <F>mm</F> </> at the rear part and <F>uh</F> so <F>um</F> </> but
Conjunct+adverb	and finally	(file00035) no, sorry police listened </> to the voice of each of them <repeat>and finally</repeat> </> and finally, scooter was brought somewhere <repeat>by the</repeat> by the
Conjunct+verb	and asked	(file00024) so, </> <repair>she, so, <F>ahh</F> he</repair>, <F><JP>etto</JP></F>, they <prs>talked</prs> with each other <repeat>and asked</repeat>, and <repeat>asked</repeat> </> <prs>asked</prs> wine. <nvs>laughter</nvs> Yeah </task> <follo
Preposition+article	along the	(file00017) <F>All right</F>, the sun is shining, and the man is running <repeat>along the</repeat>, along the street. And the kids <agr>is</agr> playing with <delart>A</delart> ball.
noun+preposition	some of	(file00011) other cases, I, <repeat>only</repeat>, only because of, <F>er</F>, my </> error. <F>Er</F>, <repeat>some of</repeat>, some of <pl>that</pl> <agr>is</agr>, <F>er</F>, getting up so late. <A> <F>Mhmm</F>.
Interrogative adverb+modal+subject	how can I	(file00017) o'clock is better <eprep>to</eprep> you? <A> <F>Uh-huh</F>. OK. OK. And, </> <repeat>how can I</repeat>, how can I choose the movie theater? <A> OK. <F>Um</F>.
Preposition+possesive pronoun	in my	(file00032e) you get interested in that? <F>Mm</F> get interested <F>mm</F> well <F>ah</F> </> <repeat>in my</repeat> <F>ah</F> third year in my <cut>high sc</cut> high
Adverb+copula be	also is	(file00021) <repeat>enjoy</repeat>, <F>ah</F>, <agr>enjoy</agr>, <F>ah</F>, <repair>hi</repair>, <F>ah</F>, her job. And <F><JP>a</JP></F>, my brother <repeat>also is </repeat> <F>ah</F>, also is a male nurse. Because, <F>ah</F>, he really
Subject+verb+to infinitive	I want to watch	(file00024) Saturday afternoon? <A> <F>Uh-huh</F>. <F>Uunn</F>, so <cut>I want to wo</cut>, <repeat>I want to watch</repeat>, </> I want to watch, <F>eh</F>, </> "Matrix." <A>

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