

Pauses and Fillers in Second Language Learners' Speech

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Introduction

Conventionally, speech in the real world is not perfect. Textbook conversations or movie scripts are managed “ideal utterances” and have no unnecessary components. Writers do not consider other factors that affect real utterances: for example, pauses, fillers, repetition, silence, etc. In real life, people use many strategies to help them think as they speak.

The speech of native speakers and L2 learners is very different. De Jong and Perfetti (2011) reported that L2 learners pay more attention to form than to meaning. Sometimes L2 learners do not know a word or an equivalent phrase in the target language. They need to search their brains for synonymous words and try to express themselves in other ways. In that case, they need to spend more time thinking about the correct word or expression and use more supportive devices than native speakers.

Review of the literature

Pauses and fillers are among the most important phenomena for investigating L2 learners' speech. O'Connell and Kowal (2004) categorized filled pauses as disfluencies. Where pauses and fillers occur is especially important in L2 speech. Tavakoli (2011) reported that the location of pauses is important in comparisons of native speakers and L2 learners. He divided pauses into four types: repetition and replacement pauses, reformulation pauses, online planning pauses, and non-formulaic sequence pauses. He found that a particular characteristic of L2 learners' pausing patterns is that pauses occur more frequently in the middle of clauses than at the end.

Although Tavakoli claims that there is a relationship between fluency and pausing patterns in L2 learners' speech, many investigators have questioned this. For example, Bosker *et al* (2012) concluded that many different factors are involved when people

judge fluency. They researched three aspects of fluency: break down, speed and repair fluency. Breakdown fluency was based on the number of interruptions in continuous speech, speed fluency on the number of words spoken, and repair fluency the number of repetitions and reformulations. They argued that breakdown and speed fluency are the most strongly related to judgements of fluency.

Bilá and Džambová (2011) investigated the function of silent pauses in L1 and L2 speakers of English and German. In their study, three groups of participants were divided into eight pairs randomly (L2 speakers of English and German, L1 speakers of English and L1 speakers of German). The participants were given a dialogue set in a hotel. Each pair read the dialogue twice and then swapped parts. The German dialogues were read aloud by ten L2 learners and six native German speakers. The English dialogues were read aloud by ten L2 learners and six native English speakers. Afterwards, they were asked to read aloud part of the dialogue as naturally as possible. The study found that L2 learners showed more diversity of pausing patterns than L1 speakers in both languages. In addition, L1 speakers tended to make their utterances in longer blocks than L2 learners.

We also need to consider the functional features of fillers in the L1 as well as the L2. Kojima (2010) investigated the functions of Japanese fillers and found that Japanese native speakers use *anō* to edit appropriate expressions. For example, Japanese use this filler as in *anō, chotto otazune sitaino desuga* (あのー、ちょっとお尋ねしたいのですが) [Erm, could I just ask you something?]. On the other hand, *ēto* is used when people need time to remember something or calculate. For example, *san tasu yon wa ...ēto, nana desu* (3 たす 4 は…えーと、7 です) [Three and four make...er, seven] is used when calculating. This suggests that different fillers have different functions in utterances.

The present study

The primary purpose of the present study is to investigate pauses and fillers in L2 learners' speech in a more complex story-retelling task than used in Tavakoli's study. Chai and Erlam (2008) claimed that using video helps people to better understand the story, so instead of retelling picture stories, participants in this study retold the story of more complex, silent video stories. In addition, the study investigates the possible

relationships between the functions of pauses and fillers in L1 and L2 speech with Bilá and Džambová's (2011) functions of silent pauses as the basic framework.

The research questions were:

1. Are there differences between the number of pauses and length of pauses in L1 and L2 speech while retelling video stories?
2. What are the qualitative characteristics of L2 learners' pausing patterns?
3. What is the difference between the functions of pauses in L1 and L2 speech?

Subjects and methods

Participants

The participants were 32 students at Tokyo Woman's Christian University. All were Japanese and spoke Japanese as a first language. They had learned English as a second language for at least nine years. They were all females aged between 21 and 22. Their majors were English Literature (11) and Language Sciences (19). Two other students taking the Career English course, which is a program specially designed to improve students' discussion, communication and presentation skills in English, also took part in the study. One was majoring in International Relations and the other History.

Materials

The stimulus materials used in the story were two Dutch TV commercials with no speech (only music). One of the videos had been used by Schmiedtova (2004) in a study of the acquisition of ways to express simultaneity of events in (L2) Czech by British and German adult learners.

One was a 35-second long commercial for sauce that Schmiedtova used in her study. In the commercial, a boy makes a hotdog and bites into it in his room. However, the sauce squirts out onto a poster of a sexy woman on the wall. As he was licking the sauce off the poster, his brother came into the room and misinterpreted what he was doing. In this commercial the simultaneous events were the boy licking the sauce off the poster, and the brother reacting to what the boy was doing.

The other was a 50-second long commercial for an insurance company. In this

commercial, a young man takes a lot of groceries out of a shopping cart and puts them in his car. Suddenly, the shopping cart starts rolling down a hill very quickly. At the bottom of the hill, there was a car with an old man in it. He is listening to the radio and does not notice the shopping cart. However, as the cart is about to hit his car, the old man notices it and reverses. The shopping cart misses the car and hits a wall. The old man's car hits the car behind. The simultaneous events in this commercial were the cart hitting the wall, and the car hitting the car behind.

Procedure

Before collecting the data, the researcher demonstrated the task to each participant. In order to avoid confusion, which might have influenced the results of the study, the video used in the demonstration was different from the videos used in the study itself, and the participants were not told the purpose of the experiment.

In the experiment, the participants were told to retell the story of the video they had just watched as if they were telling it to a friend over the telephone. There were two reasons for this. The first was to discourage the use of gestures while recording, since the study was analysis of sound data only. The other was that the study assumed a casual situation as a formal situation might have made them nervous and influenced pausing patterns. The stories were recorded on an IC recorder.

The participants were randomly divided into four groups. Each group retold the stories in a way that counterbalanced for language and video. This was done in order to control for possible effects of video and language order on the retelling (Table 1). Each group consisted of eight people and was given a different order of language and video. Participants in Group A told the story of the sauce commercial in Japanese first. Then, they told the story in English. After that, they watched the story of the insurance commercial and narrated it in English. Finally, they told the story in Japanese. Participants in Group B told the story of the sauce commercial in English first. After that, they watched the story again and narrated it in Japanese. Then, after watching the story of the insurance commercial and told it in Japanese, they watched the same story and narrated it in English. Group C watched the story of the insurance commercial at first. They narrated the story in Japanese. After that, they narrated it in English. Then,

they watched the story of the sauce commercial and told it in English. Finally, they told the story of the sauce commercial in Japanese. Participants in Group D told the story of the insurance commercial in English first, then the same story in Japanese. Then, they watched the story of the sauce commercial and narrated it in Japanese. Finally, they explained the story in English.

Table 1. Video and language order of story retelling

Seq	Group A		Group B		Group C		Group D	
	Video	Lang	Video	Lang	Video	Lang	Video	Lang
1	Sauce	Jp	Sauce	En	Insurance	Jp	Insurance	En
2	Sauce	En	Sauce	Jp	Insurance	En	Insurance	Jp
3	Insurance	En	Insurance	Jp	Sauce	En	Sauce	Jp
4	Insurance	Jp	Insurance	En	Sauce	Jp	Sauce	En

The experiment was conducted individually. The participants were shown two video stories. After they watched the first video, they were asked to spend one minute thinking about the videos and planning the story they were going to say. They were then asked to tell the story first in one language and then the other. The same procedure was followed for the second video with the order of languages reversed.

Data Analysis

The free computer software for recording and editing sound, Audacity 2.0.3 (Audacity 2.0.3 Development Team, 2013), was used to measure the length of all pauses longer than 0.4 seconds. A qualitative analysis of the data was then conducted to examine the characteristics of the pauses and to classify them. Pauses were divided into four types. There were unfilled (silent) pauses, and three types of filled pauses: fillers, reformulations and repetitions. Unfilled pauses were defined as silences longer than 0.4 seconds. Filled pauses had sounds or words in them. Fillers were defined as sounds which have no lexical meaning, for example, the sounds *er*, *well*, *ah*, or *how can I say* are fillers in English, and *ēto* (えーと) or *anō* (あのー) are fillers in Japanese. Repetitions were defined as pauses in which participants repeated previously uttered words or phrases. Reformulations are similar to repetitions to some extent but, instead of simply

repeating, the subjects reformed or corrected previously uttered words or phrases. In cases where there were silences and fillers, repetitions or reformulations, the pauses were categorised as filled. Tavakoli's (2011) categories of online planning and non-formulaic sequence were not used as they are not clearly defined.

Quantitative analyses of the data were performed using the statistics software R (R Core Team, 2013).

Results

Qualitative Analysis

Silent pauses

Silent pauses were the most frequent type of pause in both languages and tended to be scattered throughout the retellings. The participants appeared to use them when they were searching for an appropriate expression or to take a breath.

Fillers

According to Kojima (2010), the Japanese filler *ēto* is often used when people try to remember something or calculate. Similarly, *anō* is used to edit an appropriate expression in speaker's mind. Some examples from the present study are:

Example 1: That poster is the *uh how can I say* (3.74) is a woman,...

Example 2: あのー (0.50)、ホットドッグを噛んだ瞬間に、...

Uh, when the boy bites the hotdog...

Example 3: えーと (0.49)、主人公は、中学生くらいの男の子で、...

Er, the main character is a boy who may be a junior high school student.

Example 4: えーと (1.06) a man who finish shopping,...

Er, a man who finish shopping,...

Examples 1 and 2 show typical examples, and Examples 3 and 4 their use at the beginning of a story. When telling the sauce story in Japanese, 20 participants began with fillers like *ēto* (えーと) or *anō* (あのー), and 13 began with *uh* or *er* when telling the story in English. With the insurance story, 24 used fillers at the beginning of the L1 story and 14 used them at the beginning of the L2 story.

The Japanese filler *ēto* was the most commonly used filler at the beginning of both the L1 and L2 stories. With the sauce story, 18 participants used *ēto* at the beginning of the L1 retelling and 6 at the beginning of the L2 one. With the insurance story, 19 participants used *ēto* in the beginning in the L1 and 9 used it in the L2. Japanese fillers were also used in other parts of the stories in both languages (Example 5). Altogether, 23 participants used Japanese fillers when retelling the sauce story in English, and the same number used them when retelling the insurance story in English. They were used when the speaker appeared to be searching for an appropriate expression:

Example 5: He えーなんていえばいいんだろう (3.59) the...it's a woman.
He *uh, what should I say*, the ... it's a woman.

There were three patterns of L2 filler use in the L2 stories. First, the participants used short Japanese fillers, like *ēto* and *ē* (えー) in their English utterances (Example 4). Second, they used longer Japanese phrases or sentences, for example, *nan darō* (なんだろう) [*what is it*] or *nante ieba iin darō* (なんていえばいいんだろう) [*what should I say*], when they were searching for an appropriate expression in the L2 (Example 5). Third, they said the L1 translation equivalent of the L2 word they needed in the story, for example, the word *butsukaru* (ぶつかる), the translation equivalent of the L2 word *crash* (Example 6). This pattern appears to be used to help in the recall of L2 words.

Example 6: えーと、ぶつかる... (6.80) he had to crash other car...
Er, crash... he had to crash other car...

Repetition pauses

The participants seemed to use this type of pause for searching for the next word or phrase or to check what they had said. They repeated the sentence subject or a particular phrase as shown in Examples 7, 8, and 9. In English, the participants tended to repeat the sentence subject two or three times, as in Example 9.

Example 7: So the boy started to licking, *started to licking* (1.23) the belly,...

Example 8: 壁にあった、...壁にあった... (7.46) ポスターに、...
On the wall, ...*on the wall*...poster,...

Example 9: And he...*he*...*he* (5.48) eat them...

Reformulation pauses

Reformulation pauses (Examples 10, 11, and 12) were used to correct mistakes in grammar, vocabulary, or slips of the tongue and sometimes to add more information, as in Example 12.

Example 10: He made ah he bring, *brought* (3.06) his hotdog...

Example 11: 駐車場に行って、行ったんだけど、(1.75) 自分の荷物を車に入れようとした瞬間に...

He went to the parking area, *went, but*, at the time he tried to put his baggage...

Example 12: man, *one old man* (4.35) stayed at the end of the slope.

Filler + Repetition, Reformulation

Some participants had long pauses that combined fillers and repetition or reformulation when they were considering what to say next. In some cases, a Japanese filler and English repetition/reformulation were used together:

Example 13: He うーん, and he わかんない he えーと (11.3)

He *umm*, and he *I don't understand* he *er*

Quantitative analysis

This section reports on results of statistical analyses of the data, particularly in relation to the number of pauses and pause length.

Length of retelling and pauses

Table 2 shows the average lengths of utterances and pauses for each of the video stories. The figures indicate that there were more pauses in English than in Japanese. However, there appear to be no significant differences between the Sauce and Insurance stories themselves. The proportion of pauses for the Japanese Sauce story was 24.4% and the Insurance story 22.6%. Similarly, in English, it was 49.3% for the Sauce story and 51.9% for the Insurance story.

Table 2. Mean total lengths (seconds) of stories and pauses (N=32)

	Sauce Story		Insurance Story	
	Japanese	English	Japanese	English
Mean story length	39.88	60.58	43.85	68.82
Mean total pause length	9.72	29.88	9.91	35.69
Mean pause length/story length	24%	49%	22%	51%

Frequency of pause types

Table 3 and Figure 1 (mosaic plot) show the frequency of the pause types by language. The total number in L2 English (1364) was roughly double the number in Japanese (680). There is also a statistically significant difference in the frequency patterns of each pause type across languages ($\chi^2 = 81.782$, $df = 3$, $p = 0.000$). Fillers are more common in Japanese (31%) than in English (18%). On the other hand, repetitions are more common in English (9%) against 1% in Japanese. The proportion of reformulations and silent pauses is about the same.

Table 3. Frequency of pause types (simplified)

	English		Japanese	
Filler	245	18%	208	31%
Reformulation	119	9%	50	7%
Repetition	127	9%	7	1%
Silence	873	64%	415	61%
Total Pauses	1364		680	

Table 4 shows a more detailed breakdown of the reformulation pauses. Reformulation pauses were used more frequently in English (119) than in Japanese (50). The largest proportion of these were reformulations without a filler. They accounted for 68% of the reformulation pauses in English and 66% in Japanese. Filler + Reformulation was also clearly more common than Reformulation + Filler in both languages, although the proportions were not very different in the two languages.

Table 5 shows the contingency table for combinations of repetition and filler. Repetition was used much more frequently in English (127) than in Japanese (7). The number of *repetitions* in Japanese is too few to draw any reliable conclusions about more

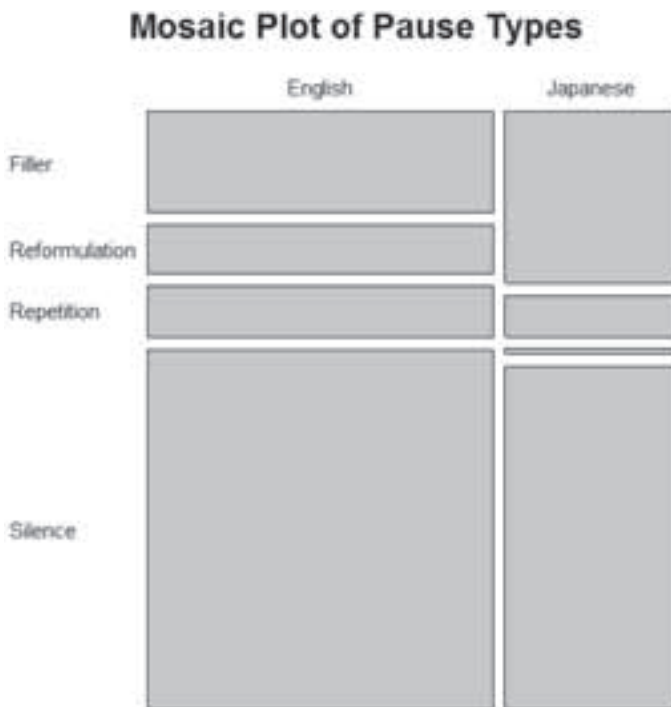


Figure 1. Mosaic plot of pause types

Table 4. Contingency table of combinations of reformulation and filler

	English		Japanese	
Reformulation only	81	68%	33	66%
Filler+Reformulation	36	30%	13	26%
Reformulation+Filler	2	2%	4	8%
Total Reformulation	119		50	

detailed patterns involving fillers.

Table 6 shows pause length by type. The skew and kurtosis figures indicate that the data is not normally distributed and therefore not suitable for parametric statistical analysis. Table 7 shows the data after has been transformed using logarithms. It is much

Table 5. Contingency table of combinations of repetition and filler

	English		Japanese	
	Repetition only	79	62%	7
Filler+Repeat	44	35%	0	0%
Repeat+Filler	4	3%	0	0%
Total Repetition	127		7	

Table 6. Pause length by type

Pause Type	Language	mean	sd	median	skew	kurtosis
Filler	English	2.28	3.82	1.49	8.71	97.73
Filler	Japanese	1.06	0.71	0.88	2.19	7.91
Reformulation	English	2.36	1.64	2.10	2.30	8.57
Reformulation	Japanese	2.26	1.85	1.81	2.32	6.58
Repetition	English	3.58	3.61	2.36	2.14	5.24
Repetition	Japanese	1.76	2.54	0.63	1.55	0.65
Silence	English	0.92	0.64	0.70	2.80	10.90
Silence	Japanese	0.68	0.31	0.57	2.08	5.89

less skewed and meets the normality assumptions for parametric statistical tests.

Figure 2 shows an interaction plot of mean pause length (log) (the transformed data in Table 7). There is quite a large difference across languages in the length of repetitions and fillers. There is a smaller difference with silent pauses, and very little difference with reformulations.

Table 8 shows the results of linear mixed effect modelling. It showed that there were significant differences for the simple effects of language and pause type. Overall English pauses were longer than Japanese ones. Different pause types also differed in length. However, there was also an interaction effect (Table 9), and post hoc tests indicated there were differences between the lengths of fillers (2.28 seconds in English, 1.06 seconds in Japanese), repetitions (3.58 seconds in English, 1.76 seconds in Japanese) and silent pauses (0.92 seconds in English, 0.69 seconds in Japanese but not reformulations (2.36 seconds English, and 2.26 seconds in Japanese)).

Table 7. Pause length (log) by type

Pause Type	Language	mean	sd	median	skew	kurtosis
Filler	English	0.43	0.77	0.40	0.81	1.78
Filler	Japanese	-0.12	0.59	-0.13	0.13	-0.05
Reformulation	English	0.66	0.65	0.74	-0.14	-0.17
Reformulation	Japanese	0.57	0.71	0.59	0.06	-0.17
Repetition	English	0.86	0.91	0.86	0.16	-0.73
Repetition	Japanese	0.02	0.97	-0.46	1.06	-0.38
Silence	English	-0.24	0.52	-0.36	0.93	0.52
Silence	Japanese	-0.47	0.38	-0.56	0.81	0.47

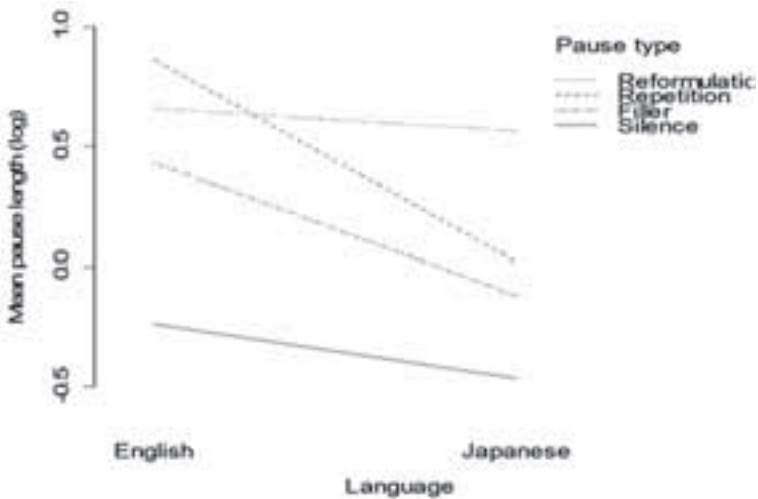


Figure 2. Interaction plot of pause length by type

Table 8. Results of linear mixed effect modeling: Fixed effects

	Sum Sq	Mean Sq	Num DF	Den DF	F	Pr(>F)
Pause Type	299.395	99.798	3	2017	211.389	0.000 ***
Language	41.064	41.064	1	2012	52.134	0.000 ***
Language by Pause type	14.171	4.724	3	2015	15.827	0.000 ***

Subject was the only significant random factor in the model ($\chi^2 = 202$, $df = 1$, $p = 0.000$), suggesting a lot of individual variation. The qualitative data support this. For example, one participant did not use fillers when retelling the Insurance story in Japanese although she used them a lot when she retold the story in English. On the other hand, she did not use fillers when telling the Sauce story in English although she used them in Japanese. Some subjects had very long filled pauses, but others tended to have short ones. Some participants also tended to use fillers between almost every sentence but not others.

Table 9. Cross language (Japanese-English) pause type interaction effects (comparisons of different pause types within and across languages are not reported)

Pause type	<i>p</i>
Filler	0.000 ***
Reformulation	0.304
Repetition	0.000 ***
Silence English	0.000 ***

Discussion and Conclusions

The present study investigated pauses in L2 learners' retelling of the stories in television commercials in their L2 English and L1 Japanese. Overall, learners paused roughly twice as often in the L2 than in the L1. One explanation for this is that they may have been paying more attention to grammar and vocabulary and therefore needed a longer time to produce their utterances as suggested by De Jong and Perfetti (2011). There was also a statistically significant difference between the frequency distributions of each pause type across language.

Pauses with fillers were proportionally more common in the L1 than in the L2 but tended to be of shorter duration, and L1 fillers, like *ēto* and *anō*, were used when telling stories in the L2. *Ēto* was also the most common filler at the beginning of the stories in both languages. If, as Kojima (2010) has observed, learners use these kinds of pauses to remember or 'calculate' their next utterance (*ēto*) or edit an appropriate expression (*anō*), it is interesting that filled pauses are proportionally less common in the L2.

Repetitions were seldom used in the L1 and were much more common, both in terms of rule frequency and proportion, and of longer duration in the L2 than the L1. During repetition pauses, the sentence subject was often repeated two or three times. Repetitions were sometimes combined with fillers. A possible explanation for this is that learners use repetitions as a kind of filler. When searching for the next words they needed or checking what they had just said, they make long pauses because of language difficulties and try to fill them with repetitions.

During reformulation pauses, learners correct mistakes in grammar and vocabulary, slips of the tongue, or sometimes add more information. The distribution of reformulations was similar in the L1 and the L2 and, unlike the other kinds of pauses, the durations were similar.

Silent pauses were the most common kind of pause, accounting for over 60% of all pauses in the L1 and L2. They were also longer in the L2 than in the L1 and tended to be scattered throughout the story retellings.

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要 旨

本論文は、第二言語学習者の発話におけるポーズとフィラーの特徴について調査を行ったものである。日本語を母語とし、英語を第二言語として学ぶ東京女子大学の学生32人を調査対象とした。被験者に二種類のセリフのないコマーシャルを見せ、そのストーリーを日本語、英語の両方で説明させるという実験を実施し、そのデータを元に量的および質的分析を試みた。

その結果、ポーズの頻度に焦点を当てた場合は、日本語より英語の方が約2倍、ポーズが多いことが明らかになった。また、日本語の発話ではフィラーが、英語の発話では繰り返し表現が多く観察された。これは、被験者が日本語の発話で使われるフィラーと同じように、英語の発話において繰り返し表現を使用する可能性を示唆している。一方、日本語と英語の発話を比べた場合、繰り返し表現とフィラーにおいては明らかな量の違いが見られ、沈黙において違いは比較的少なく、訂正表現においては微量の違いしか見られなかった。訂正表現を除く、フィラー、繰り返し表現、沈黙には二言語間での相互作用が認められた。質的分析においては、ポーズの種類によってその特徴や機能も様々であることが明らかになった。以上の結果から、学習者が母語を話す場面と第二言語を話す場面では、ポーズとフィラーの特徴や機能は変化すると考えられる。

今後の研究では、被験者の幅をより広げる必要がある。加えて、第二言語のスピーキング能力および使用するビデオのレベルの計測方法をより確実なものにすることが望まれる。