



What types of texts and reading aids are good for Japanese graded readers?

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This study investigates what types of texts and reading aids are suitable for Japanese graded readers. Thirty-one New Zealand university students of Japanese as a foreign language read one authentic text and four differently modified texts. The four differently modified texts were simplified texts, elaborated texts, texts with marginal glosses and texts with on-screen pop-ups. The participants completed an oral free recall task and a short answer reading comprehension test. Statistical analysis showed that their scores on reading tasks for the four modified texts were significantly higher than their scores on the tasks for the authentic texts. The participants gained the highest scores with the simplified texts, followed by the elaborated texts. Qualitative analysis was conducted on data from the free recall protocols and exit interview. Both quantitative and qualitative results suggest that simplified texts are the most suitable for graded readers targeted at developing students; elaborated texts play an important role for advanced students; key word provision at the beginning of a text is a useful supportive feature for L2 Japanese readers; provision of *furigana* tuned for learners' levels can motivate their *kanji* learning more than unselective provision of *furigana*; and hard copy texts are preferred to texts on a computer screen for pleasure reading.

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Introduction

“The publishing of graded readers is big business,” writes Claridge (2012, p. 106) in a discussion of texts designed for learners of English. Numerous graded readers are available in the context of English as a second and foreign language (ESL and EFL). In contrast, as the Japanese Extensive Reading Research Group (2012) points out, there is a scarcity

of graded readers in the incipient field of Japanese as a second and foreign language (JSL and JFL). In fact, a series produced by the Japanese Extensive Reading Research Group may be the only systematic series of Japanese graded readers available for learners of Japanese. Their *Nihongo Tadoku Library* (Japanese Extensive Reading Library) has more than one hundred graded readers, which have been constructed over several years. Many more Japanese graded

readers are needed, however, to have sufficient texts for conducting extensive reading (ER) projects with learners of Japanese. According to Day and Bamford (2002, pp. 137–138), three of the “top ten principles” of extensive reading are “a variety of reading material on a wide range of topics must be available”; “learners choose what they want to read”; and “learners read as much as possible”. Aligning with these principles, the current study investigates what types of texts and reading aids are suitable for Japanese graded readers, anticipating that its findings will make a contribution to more vigorous construction of well-written graded readers for learners of Japanese in the near future.

Authentic Texts and Modified Texts

This study used authentic texts and four differently modified texts to examine what types of texts and reading aids are most suitable for Japanese graded readers. The modified texts were: simplified texts, elaborated texts, texts with marginal glosses, and texts with on-screen pop-ups.

Many scholars assert that authentic texts should be used predominantly in foreign language reading instruction (e.g., Bernardo, 2006; Bernhardt, 2011; Blau, 1982; Gilmore, 2011; Honeyfield, 1977; Leow, 1993; Mountford, 1976; Swaffer, 1985; Swaffer, Arens, & Byrnes, 1991). However, the linguistic features of authentic texts pose difficulties for developing learners, and therefore, other scholars support the use of modified texts (e.g., Allen & Widowson, 1979; Bell, 2001; Claridge, 2005; Darian, 2001; Davies, 1984; Day, 2003; Day & Bamford, 1998; Everson & Kuriya, 1998; Gardner & Hansen, 2007; Nation & Deweerdt, 2001; Salaberry, 1996). Modified texts, which have been discussed under various names (e.g. simplified texts, adapted texts, and contrived texts), are in-

tended to mitigate the difficulty of authentic texts, bringing them down to the level of learners by means of various modification measures.

Simplification has played an important role in creating graded readers that provide learners with accessible and desirable learning opportunities (Allan, 2009; Claridge, 2005; Day & Bamford, 1998; Nation & Ming-Tzu, 1999) by breaking up complex sentences, replacing lower frequency words with higher frequency words (Mountford, 1976), and deleting paragraphs or secondary information (Shook, 1997; Vincent, 1986). In more recent years, doubts concerning the effects of traditional simplification have been raised. Researchers such as Graesser, McNamara, and Louwerse (2003), Honeyfield (1977), Shook (1997), and Swaffer (1985) have pointed out flaws caused by the simplification processes such as unnatural, oversimplified linguistic characteristics, and the loss of the inherent cohesiveness of authentic texts. These researchers claim that the loss of inherent cohesiveness renders simplified texts more difficult to understand. Hence, elaboration is proposed as an alternative way of adapting authentic texts by scholars such as Kim and Snow (2009), O'Donnell (2009), and Yano, Long and Ross (1994). According to Kim and Snow (2009, p. 131), “The goal of elaboration is to improve text coherence through clarification, repetition, and explicit connections.”

The current study used two other types of modified texts in addition to simplified and elaborated texts. Texts with marginal glosses were included because glosses have been suggested as an effective method of rendering authentic texts accessible to language learners by reducing vocabulary difficulty (Holley & King, 1971; Jacobs, 1994; Nation, 2001). However, empirical findings regarding the effects of glosses on

reading comprehension and vocabulary learning are inconsistent (Davis, 1989; Jacobs, Dufon, & Fong, 1994; Johnson, 1982). Nevertheless, the provision of reading aids including glosses and glossaries in graded readers is strongly recommended by Hill (2008), a leading graded reader researcher. Therefore, the effects of glosses merit investigation in the current study of extensive reading in Japanese as a second and foreign language. Texts with on-screen pop-ups are also used in this study, reflecting the need to contemplate new avenues of extensive reading opened by advances in information technology, including the internet and digital books. In general, reading by means of media other than hard-copy texts seems to be gaining popularity. In terms of language learning, however, empirical findings in this area are inconsistent. For example, Arnold (2009) reports that despite overall positive findings on online extensive reading, his participants “did not express a stronger preference for online texts” (p. 353), while Pino Silva (2009) emphasizes the potential power of online extensive reading, saying that “used together, paper-based and web-based ER may lead us to entertain a combined teaching strategy that increases the options available to students with somewhat different learning styles” (p. 94). It is, therefore, of empirical interest to examine whether or not L2 Japanese learners have a preference for either of these two types of media.

Research Questions

The study examined what types of texts and reading aids are most suitable for Japanese graded readers by addressing the following research questions.

1. What types of texts facilitate effortless reading?
2. Does support provided by either em-

bedded modifications or out-of-text reading aids influence affective aspects of learners? If so, what types of texts and reading aids are liked or disliked by learners?

3. Do learners have a preference for either paper reading or reading on a computer screen?

In this paper, “effortless reading” is defined as “speedy reading with a satisfactory understanding of the gist of a given text”; “embedded modifications” refers to simplification and elaboration; and “out-of-text reading aids” refers to key word provision, *furigana* provision, marginal glosses, and on-screen pop-ups. Regarding Research Question 2, investigation of affective aspects of learners is included, because learners’ engagement with texts and motivation to read differ depending on how they respond to textual features. Therefore, it is believed that knowing how learners respond to differently modified texts in terms of affective aspects will be of importance for writers of Japanese graded readers.

Method

Participants

The participants of this study were university students of Japanese (N = 31). There were 13 males and 18 females. They had either started learning Japanese at senior high school and continued the study at university, or started their study at the time of university entrance. Their L2 proficiency levels differed widely. Four of them had passed the highest level (Level 1) of the former Japanese Language Proficiency Test (JLPT). JLPT is the only internationally recognized language proficiency test for learners of Japanese. Many final-year university Japanese language courses aim to develop students’ proficiency levels up to

Level 2 of JLPT (see Appendix 1 for JLPT). Many of the current participants had not reached Level 2 of JLPT. Twenty-five participants were from an L1 English background, and six were from an L1 Chinese background. Of these 31 participants, five had lived in Japan for a little less than one year as exchange students at Japanese universities. One of these five students had had an opportunity to stay in Japan for a few more months. The remaining participants had stayed in Japan for between two weeks and four and a half months, with six participants having never been to Japan. The participants' university majors varied, including Japanese, law, humanities, social sciences, and commerce.

Assessment tasks and procedures

The researcher met each participant individually on two days. On the first day, each student took a level check test and answered a biodata questionnaire. The reading assessment tasks were carried out on the second day. An oral free recall task and a short answer reading comprehension test were employed to measure the participants' reading comprehension. The oral free recall task was carried out in English because it was the first language of the majority of the participants. Bernhardt (1983) and Watanabe (1998) recommended that a free recall task be conducted in the L1 in order to avoid effects from the participants' L2 proficiency. Because all of the L1 Chinese participants' proficiency level in English was above upper intermediate, it was judged that the degree of possible disadvantage would be minimal. The short answer reading comprehension test (see Appendix 2 for an example), contained not only replicate questions but also synthesis and inference questions to measure participants' surface understanding and their understanding of the gist of a text. In addition, a previous vocabulary-knowledge test (see Appendix 3 for an ex-

ample) was given to determine how much vocabulary knowledge each participant had prior to taking part in this study.

On the second day, each participant repeated the following procedure five times:

reading, oral free recall, short answer reading comprehension test, previous-vocabulary-knowledge test.

The effect of the order in which participants saw the different kinds of texts was counterbalanced by using a Latin-square design. Each participant read all five texts (one authentic text and four differently modified texts), which were on five different topics (See Table 1). At the end of the short answer reading comprehension test, participants were asked to rate three items on a five point Likert scale in order to obtain the participants' judgments on "self-perceived understanding", "familiarity of texts", and "level of interests of texts." The previous-vocabulary-knowledge tests gave the words or phrases that were the target of vocabulary modification due to their level of difficulty, and asked each participant whether he/she knew the words. Each participant's reading time was recorded for later analysis.

At the end of the second day's session, a semi-structured exit interview was conducted with each participant.

Materials

Five different versions of five texts (each on a different topic) were prepared for this study. (See Appendix 4 for the linguistic features of the texts.) All the authentic texts were obtained online. For the Latin-square design, five topics were required. Topics were chosen to avoid giving an advantage to participants with certain background knowledge and to minimize the influence of topic familiarity (Yano et

Table 1.*Example of text assignment (for five participants)*

Partici- pants	Authentic texts	Modified Texts (All have key words and <i>furigana</i> provi- sion)			
		simplified texts	elaborated texts	texts with marginal glosses	texts with on-screen pop-ups
1	*A	B	C	D	E
2	B	*C	D	E	A
3	C	D	*E	A	B
4	D	E	A	*B	C
5	E	A	B	C	*D

Note. Each capital letter indicates a topic.

The symbol * marks task from which each student started reading.

Table 2.*The five text topics*

Title	Type	Description
<i>Good Rivals</i>	narrative	Memoir about the author's high school friend.
<i>Hibakusha (A-bomb survivor)</i>	narrative	Memoir about the author's experience as an A-bomb survivor.
<i>Give Me Advice</i>	agony aunt column	A person seeks advice about a behavior problem.
<i>Mini-Skirts</i>	online news article	A report about Japanese high school students' extremely short skirts.
<i>Good Tourists</i>	online news article	Extract from a famous newspaper column, "Vox Populi Vox Dei."

al., 1994). Specifically, the five topics chosen were written for general readership such as newspaper readers, and therefore, the participants would not need either academic, technical, or professional background knowledge to understand them. Table 2 summarizes the five topics.

The authentic texts were modified by the researcher to create the other four versions: simplified texts, elaborated texts, texts with marginal glosses, and texts with on-screen pop-ups. The average lengths of authentic texts, simplified texts, and elab-

orated texts were 347.4 words, 393 words, and 616.4 words respectively. Texts with marginal glosses or on-screen pop-ups were the same length as the authentic texts. All of the modified texts included two common reading aids: key words and *furigana* provision.

The key words were provided at the beginning of each modified text. Providing key words is supported theoretically and empirically by Ausubel (1960), Charrow (1988), and Omura (2001). In order to determine which words had high "keyness",

AntConc 3.2.1w (Anthony, 2007) was used. This procedure provided a list of a few dozen words with high “keyness” for each topic. From the lists, the words that were above the difficulty of the former JLPT Level 2, did not have suitable higher frequency synonyms, or were difficult to guess from contextual cues were chosen as key words and were presented with English definitions.

The former JLPT Level 2 was used as a criterion because the proficiency of the majority of the participants’ was equivalent to Level 3 or Level 2 (Level 2 being the higher), as determined by the results of the level check test. Therefore, it was surmised that most of the participants probably knew many words that were at Level 3 and below, while they might not know many words that were higher than Level 2.

The other reading aid added to all modified texts was *furigana* provision (ruby annotation; see Appendix 5 for an example). *Furigana* provision can positively influence learners’ cognitive processes as they read, according to Ogawa (1991), who explains that “a word that a reader cannot phonologically recode is difficult to integrate as a memory in information processing during a reading act” (p. 81, my translation). *Furigana* was attached to all the *kanji* characters and compound words that were above the difficulty of the former JLPT Level 3. The reason why Level 3 was used instead of Level 2 as the criterion for *furigana* provision is that decoding *kanji* phonologically is rather difficult because it depends mainly on learners’ *kanji* knowledge.

In the process of modifying the texts, general theoretical foundations of text modification in the context of ESL/EFL were employed when applicable, whereas special consideration was given to the pos-

sibility that Japanese texts would need different modifications due to some linguistic features that differ from those of English. For example, *furigana* provision was uniformly added to all the modified texts as explained above. That is because this is thought to be a beneficial method for learners who have a large spoken vocabulary size, but do not have a high *kanji* proficiency. Regarding syntax issues, Japanese sentences often contain long noun-modifying clauses which precede nouns without markers. These pose difficulty for L2 Japanese readers. Therefore, special attention toward such issues was taken in the process of text modification.

The target words for vocabulary modification (TWs, hereafter) were words that were above Level 2 of the former JLPT, but not included in key words and difficult to guess from contextual cues. A widely used online reading tool, Reading Tutor (Kawamura, Kitamura, & Hobara, 1997) was used to assess the difficulty of the completed simplified and elaborated texts, indicating that the modification measures were successful in terms of vocabulary control. The texts were designed so that the vocabulary difficulty of the simplified texts was the lowest, followed by that of the elaborated texts, and the authentic texts had the highest level of vocabulary difficulty. Because the text was not modified in the texts with marginal glosses and on-screen pop-ups, the level of their vocabulary difficulty is the same as that of the authentic texts.

Simplified texts were constructed by applying the following modification measures:

- shortening lengthy sentences
- replacing low frequency words with higher frequency words
- deleting non-essential episodes

Elaborated texts were constructed by applying the following modification measures:

- providing a clear background setting for the content
- explaining unfamiliar cultural aspects
- inserting higher frequency synonyms or comprehensible explanations for low frequency words after the words themselves, introduced by the word *tsumari* (that is)
- adding stimulating questions

For the texts with marginal glosses and texts with on-screen pop-ups, the definitions that were used for TWs were the same as those inserted after low frequency words in the elaborated texts. TWs were in bold-type, and the gloss was placed on the right-hand side. The main body was accorded a larger space on the page and appeared in a larger font size (10.5pt~12pt) while the gloss was given less space, appearing on the margin of the page in a smaller font size (10pt-10.5pt). Texts with on-screen pop-ups were prepared as pdf files. On the computer screen, the text was set up with the standard presentation, and pop-ups with the same definitions used in the other modified texts were added to TWs.

Scoring procedures

All of the texts used in this study were first translated into English and then analyzed into idea units because the free recall task was conducted in English. The criteria for determining an idea unit employed in a study by Carrell (1985) were adopted. The participants' L1 (English) oral free recall protocols were transcribed and scored by counting the correctly recalled idea units. These scores were converted into a percentage. Two people gave scores for 20% of the data with an interrater reliability of .978 (Cronbach's Alpha), and intrarater

reliability for the whole dataset was .993 (Cronbach's Alpha). The scores on the short answer reading comprehension test were also converted into percentages. Two raters scored 10% of the data (interrater reliability was .959, Cronbach's Alpha), and established model answers. Then the researcher scored the rest of the data according to the model answers.

Results and Analysis

Quantitative data analysis: Main effects of text type, topic, native language and proficiency level on the participants' oral free recall scores

Generalized Estimating Equations (GEEs, Hanley, Negassa, Edwardes, & Forrester, 2003) were used to fit a linear regression model for the participants' free recall scores. In this model, text type and topic were repeated within each participant. There were five text types: authentic texts, simplified texts, elaborated texts, texts with marginal glosses, and texts with on-screen pop-ups. There were five texts on different topics: *Good Rivals*, *Hibakusha* (i.e., A-bomb Survivor), *Give Me Advice*, *Mini-Skirts* and *Good Tourists*. For all regression analyses, the participants' native language (English or Chinese) and proficiency level (high, middle or low) were also used as factors in order to control for native language and proficiency level.

Overall, the participants' free recall scores were significantly different depending on text type, topic, native language and proficiency level (Wald *Chi-Square*, $p < .005$ in all four cases). Table 3 indicates each variable's p -value and the corrected quasi likelihood under independence model criterion (QICC) in the basic model.

Table 3.*Free recall scores: Each variable's p-value and QICC in the basic model*

Variables	p-value	QICC
text type	$p < .0005$	49237.841
topic	$p < .0005$	
native language	$p = .005$	
proficiency level	$p < .0005$	

Table 4.*Free recall scores: β coefficients, Wald χ^2 and p-value of text type*

Text Type	β coefficients	Wald χ^2	p-value
authentic	-10.015	29.898	$p < .0005$
on-screen pop-ups	0	-	-
marginal gloss	1.867	.798	$p = .372$
elaborated	6.034	3.563	$p = .59$
simplified	6.721	4.166	$p = .41$

Effects of text type on the participants' free recall scores

The β coefficients of text type in the final model including text type, topic, native language, and proficiency level are presented in Table 4 above, along with the Wald χ^2 and p-value. β coefficients are also called standardized coefficient. The relation between variables can be estimated in a linear regression model of $Y = \beta x + \alpha_1 + \alpha_2 + \alpha_3 \dots$

These figures indicate the different effects of each text type on the participants' free recall scores when texts with on-screen pop-ups are used as the baseline text type. For example, with simplified texts, the model shows a rise in the free recall scores of 6.721, on average, over the scores for the texts with on-screen pop-ups. The model then demonstrates that controlling

for topic, native language, and proficiency level, the free recall scores are the highest for simplified texts and lowest for authentic texts.

Post hoc tests on text type indicate that the free recall scores for authentic texts were significantly lower than those for all modified texts, $p < .0005$. Between the four differently modified texts, there was no statistically significant difference. The rank of the text types in terms of the free recall scores was, in decreasing order: simplified --> elaborated --> marginal glosses --> on-screen pop-ups --> authentic.

Main effects of text type, topic, native language, and proficiency level on the participants' short answer reading comprehension test scores

GEEs were also used to fit a linear regres-

sion model to the participants' scores on the short answer reading comprehension test (hereafter, comprehension scores). The same analytical procedures were employed. Overall, text type, topic, and proficiency level had statistically significant effects on comprehension scores (Wald *Chi-Square*, $p < .0005$ in these three cases), while native language was not significantly predictive of comprehension scores ($p = .657$). Table 5 indicates each variable's p -value and QICC for comprehension scores.

Effects of text type on the participants' comprehension scores

The β coefficients of modification type in the final model including text type, topic, native language, and proficiency level are presented in Table 6 below, along with the Wald χ^2 and p -value.

The model, therefore, shows that controlling for topic, native language, and proficiency level, the comprehension scores were the highest for simplified texts and the lowest for authentic texts.

While the participants' free recall scores and their comprehension scores presented similar patterns, the analysis of the comprehension scores detected statistically significant differences between the modified texts. Post hoc tests on text type indicate that the comprehension scores for simplified texts were statistically significantly higher than those for texts with marginal glosses or on-screen pop-ups, $p < .0005$, but not significantly different from those for elaborated texts ($p = .111$).

Table 5.

Comprehension scores: Each variable's p -value and QICC in the basic model

Variables	p -value	QICC
text type	$p < .0005$	47624.598
topic	$p < .0005$	
native language	$p = .657$	
proficiency level	$p < .0005$	

Table 6.

Comprehension scores: β coefficients, Wald χ^2 and p -value of text type

Text Type	β coefficients	Wald χ^2	p -value
authentic	-15.967	15.224	$p < .0005$
marginal gloss	-3.767	.737	$p = .391$
on-screen pop-ups	0	-	-
elaborated	9.867	5.395	$p = .020$
simplified	20.767	30.902	$p < .0005$

Effects by topic, native language, and proficiency level on the participants' free recall scores and comprehension scores

The focus of this study is on the effects of text type, and therefore the effects of topic, native language, and proficiency level are discussed only briefly, although the importance of these three variables should not be underestimated.

Topic and proficiency level both had significant effects on the scores of both tasks. First, comprehension scores were significantly lower for *Give Me Advice* (the agony aunt column) than for the other four topics, and significantly higher for *A-bomb survivor* (one of the two narrative memoirs) than for the other four topics. Secondly, the higher the participant's proficiency level was, the higher were his/her scores on both assessment measures. Third, the participants' comprehension scores did not differ significantly according to their native language, whereas their free recall scores did. The L1 Chinese participants' free recall scores were significantly higher than those of the L1 English participants. There were only six L1 Chinese participants in this study. A larger sample size would be required to investigate the validity of this variable in terms of this finding of an effect of first language background on comprehension scores.

Participants' judgement of "self-perceived understanding", "familiarity", and "level of interest" of texts

Each participant rated the three factors of "self-perceived understanding", "familiarity", and "level of interest", on a 5-point Likert scale after completing the two reading tasks for each text. A linear regression model was fitted to these three factors. Only a brief summary of the results is presented here due to the space limitation.

First, the statistical analysis showed that participants' rating of their understanding of authentic texts was significantly lower than their rating of their understanding of the four modified texts. Their rating of their understanding of simplified texts was significantly higher than it was for the other four texts, with elaborated texts rated the lowest although their scores on the two reading tasks with elaborated texts were higher than those for texts with marginal glosses or on-screen pop-ups. Second, the participants found the content of authentic texts significantly less familiar than that of simplified texts. Finally, the participants generally found *Good Rivals* and *A-bomb Survivor* (both narrative memoirs) more interesting than the other three topics. *A-bomb Survivor* was rated the most interesting topic, followed by *Good Rivals*.

Previous-vocabulary-knowledge test

The previous-vocabulary-knowledge test indicated that L1 English participants knew only 31.4% of TWs while L1 Chinese participants knew 68.8% of TWs. Komori, Mikuni and Kondoh (2004) show that knowledge of more than 96% of running words in a text facilitates L2 Japanese readers' comprehension. Therefore, the participants' vocabulary knowledge was not sufficient for unassisted reading of the authentic texts used in the current study.

Reading time per correctly-recalled idea unit

Miller and Kintsch (1980) claim that "the best index of readability is ... reading time per unit recalled" (p. 336). The average time to recall one idea unit correctly was calculated separately for the differently modified texts. As Table 7 below demonstrates, the participants spent the most time recalling one idea unit correctly when they read the texts with on-screen pop-ups and the second most with the texts with marginal

glosses, whereas they spent the least time recalling one idea unit correctly when they read the simplified texts. Therefore, measured in terms of speed, the level of effortless reading of the current participants was highest with simplified texts and lowest with texts with on-screen pop-ups.

Qualitative analysis of free recall protocol data

The data obtained from the participants' free recall protocols was also analyzed in a qualitative way. In the following sections, pseudonyms are used to refer to each participant and his/her proficiency level is specified after the pseudonym.

Participants' frustration when reading authentic texts

In general, not many metacognitive remarks were seen in the participants' free recall protocols on the modified texts. Numerous participants, however, produced metacognitive comments, expressing their frustration at not being able to understand the content of the authentic texts, as in the following examples:

There were lots of *kanji* which I didn't understand...Um, and there were lots of *kanji*. (Albert, advanced)

Lots of *kanji*! (sighs and laughs)...And, then, I really didn't understand much after that. (Caitlin, intermediate)

Yeah, some of the *kanji* are really long and troublesome. I don't know, is it about a med school?...Um, and something about a counsellor, but I don't know...(pause) *kanji*...There is not much I can talk about...Yeah, no, I don't know the majority of that. (Caleb, lower

intermediate).

The qualitative analysis of the free recall protocols also suggests that the participants had trouble following the traditional Japanese rhetorical organization, and that they misunderstood the main theme of topic *Give Me Advice* because of insufficient cultural background knowledge. Although due to space limitations, these two issues are not further discussed here, they should not be treated lightly in future L2 Japanese reading research.

Qualitative analysis of exit interview comments

The semi-structured exit interviews were transcribed for analysis. In this section, the interview questions are presented followed by some of the most noteworthy comments that participants made in response to the questions.

Question: Do you find any text type easier to read?

More than half of the participants answered that the simplified texts were the easiest and most preferred. Their reasons for this preference included, "the simplified text is closer to those I am used to in my textbook" and "in the simplified text, there weren't many words I didn't know." While these comments were focused on vocabulary aspects of simplified texts, the following comments of two participants provide us with insight into other advantageous aspects of simplified texts.

I felt like I could almost skim read and for my confidence, probably a good one to start with for me...the simplified one...is good for me. I feel like I'm reading naturally, instead of looking at

Table 7.*Average time taken to recall one idea unit (seconds)*

Authentic texts	Simplified texts	Elaborated texts	Texts with marginal glosses	Texts with on-screen pop-ups
70.8*	48.3	84.9	121.9	123.0

Note. *Many participants could not recall any idea unit correctly for the authentic texts, and such cases were not included in this calculation, which may be the reason that the time for authentic texts is lower than the time for three of the modified text types.

words, I can read sentences. (Albert, advanced)

I like the short sentences in the simplified text... because Japanese is written with the verb bit in the end, instead of the place we put it, I don't know which end to go to...if it is, like, complicated sentences. So, when it gets shortened, I get to grab a bit of information and get to the next bit. (Olivia, lower intermediate)

For extracting the meanings of sentences, Paul (lower intermediate) also mentioned:

...when you've only got Japanese at my level, you really want to know just key information. That's what I think. I thought that breaking up the sentences (in the simplified texts) lets you do that really well.

In contrast, only a small number of the advanced participants made comments in favour of elaborated texts, although the participants' reading comprehension was better with the elaborated texts than with the texts with marginal glosses or on-screen pop-ups. Jeremy (advanced) commented that "the elaborated text is easy to understand because my understanding is supported by lots of fringe detailed information."

The participants who chose texts with pop-ups on a computer screen as their most preferred text type pointed out the choice involved – or more precisely, "a choice of learning particular words or not" (Laura, advanced) – as the advantage of the texts. The adjacency of the pop-ups to the actual text also attracted some participants. Abby (upper-intermediate) said, "the pop-up is good because I can get information so close to the part which I am actually reading."

While some participants made negative comments about glosses, Vanessa (advanced) praised them, saying "when I have a gloss and the meaning in simpler Japanese, I like that one. I guess that is probably the best, because I can still see (original) difficult words." Vanessa probably welcomed the glosses because it gave her the clearest environment for vocabulary learning. This preference of Vanessa's was held by one of the most advanced participants, Andrew. He maintained that he would like to have more exposure to authentic texts in order to acquire native-level fluency in reading.

Four participants preferred authentic texts. All of them were advanced learners, two having passed Level 1 of the former JLPT. Nadine and Edith pointed out the good flow of the authentic texts as the reason for their preference. Rachel identified

an affective factor, saying that she felt a sense of achievement in reading authentic texts. Mabel gave analytical feedback about authentic and elaborated texts, her two preferred text types:

I liked the original text. The elaborated text is a bit too long and it has the potential to diminish readers' interests. If you don't understand, the elaboration is very useful. But if you get a lot of explanations for words you know, you feel like, "yeah, I know." (my translation of Rachel's comment in Japanese)

Question: Which type of text is your least preferred or the most difficult one?

The remarks of the less proficient participants indicated that authentic texts were beyond their capabilities. Ashley (intermediate) said, "the whole sentence is a write-off...With heaps of *kanji*, I can't understand any." Paul (lower intermediate) said, "I couldn't try to even guess what it meant."

Less proficient participants also found elaborated texts demanding. Stacy said that "elaboration gives too much detail. So, I think that in it the points get lost." Jackie (lower intermediate) simply remarked that "elaboration is too long." Nicky (super-advanced) noticed that there were too many occurrences of the word *tsumari* (that is) in the text and I found it strange. This word was used as a marker for succeeding lexical elaboration. If repetitive usage of this word appears to be unnatural for some learners, this could be a crucial shortcoming of elaborated texts.

Some participants chose texts with marginal glosses or on-screen pop-ups as their least preferred text type. Their main reason for disliking them was that looking at word definitions in either glosses or pop-ups disturbs the flow of reading. One

particularly instructive comment given by Jeremy (advanced) was that "using pop-ups is actually another thing that I have to concentrate on."

The issue of distraction caused by glosses and pop-ups is worth attention. This is probably one of the reasons that the current participants' comprehension was low with the texts with marginal glosses and on-screen pop-ups. Kim (advanced) aptly explained why such distraction occurs. When asked which text was her least preferred, she answered:

Gloss. Stopping reading, checking it out, then going back to continue [reading], things do not get connected, it makes reading difficult. I think the flow is important...I cannot concentrate [with a gloss].

Question: Which do you prefer, embedded modifications or out-of-text reading aids?

Participants were divided in their responses to this question. I will call one group "flow readers" and the other, "analytical readers." The "flow readers" tend to like embedded modifications in narrative texts because such modifications with such a genre let them engage with the text without disturbing the flow of reading. On the other hand, the "analytical readers" enjoy learning new linguistic items by using glosses or pop-ups. For them, reading is more or less a tool for learning language rather than an end in itself.

The following comment by Albert (advanced) succinctly illustrates the position of "flow readers":

...it feels like studying [when using glosses] because of flipping back and forth, and trying to remember words. I know with the simplified text, I don't learn much because difficult words are

taken out. But with my current level to improve gradually, it's important to build up confidence. And when I can read a text quickly, I can understand it all, and enjoy it too. In my opinion, it's very important to enjoy it. Reading a difficult text with glosses, trying to learn many words is not good for me.

This comment should prompt us to contemplate a few significant factors in L2 reading: confidence, enjoyment of the reading process, the interest of a text, and the importance of reading speed. On the other hand, "analytical readers" also have convincing suggestions:

I don't like embedded modifications... With pop-up, the next time I read the same article, I have to force myself to remember...(with) embedded modifications I will not have to do so or I will not be given such a choice. Embedded doesn't make you remember. (Derek, upper intermediate)

For Derek, one of the many purposes of reading in Japanese is to learn new words. Therefore, he sees reading Japanese texts as a learning opportunity rather than a pleasurable experience.

Question: Which do you prefer, reading a hard-copy text or reading a text on a computer screen?

The overwhelming majority of the participants preferred a hard-copy text. Common reasons for preferring to read a hard-copy text were the "difficulty of keeping the right location on the computer", the "nice feeling of paper", the "pleasure coming from turning pages and holding a book", and so forth. In contrast, there were two participants who supported reading texts on the computer. They presented the usefulness of online reading aids such as pop-up dictionaries and multimedia features

as the biggest reason for their preference. Regarding the often-claimed benefits of such computer reading aids, Peter (lower intermediate) had a more cautious attitude:

Hard copy for reading every time...But looking for something, searching for assignments, it's better on a PC. It's easy to find the meaning of words. A PC is a useful tool but not an enjoyable tool. ... [Regarding online tool-assisted reading] It's not reading but it's referencing. [Answering a question of "which do you choose to read in Japanese",] Hard copy. Hard copy texts force you to use your own skill while computers do it all for you.

Peter was able to see not only the benefits of using computer tools but also the downsides, because they fail to nurture necessary reading skills.

Question: Did key word provision help your comprehension?

Key words at the beginning of each modified text were welcomed by all the participants. A comment made by Olivia (lower intermediate) vividly illustrates the efficacy of key words:

I like having some key words to start with because I already know what it's gonna be about. So when I'm reading it, I know I'm on the right track...I don't have to do this the whole time, "Oh, I wonder if I'm right or not?"

Question: Did furigana provision help your reading process?

More than half of the participants wholeheartedly appreciated provision of *furigana* even though it did not necessarily lead to understanding of unknown *kanji* words, as Ashley (intermediate) pointed out:

At least I can still read it and make a sound [with *furigana*]. And even if I don't know the word, if I can read the whole sentence naturally, it almost makes sense a little bit. But with a *kanji* word... you can't even sound it out. And it's quite disconcerting as well. Keep reading and keep finding you don't know, you get unmotivated. "Oh, I don't know anything!"

Likewise, Edith (advanced) suggested that if she is given *furigana* readings of unknown *kanji* words, she does not have to abstract such words. What she means is that knowing how to read unknown *kanji* words enables readers to process those words in a more concrete way because they at least have phonological information in a specific context rather than only abstract visual input.

An L1 Chinese learner of Japanese, Dylan (super-advanced), said that he preferred to be given *furigana* for words that he did not know because otherwise he would keep reading unknown words in the Chinese way and would not learn the Japanese pronunciation.

While more than half of the participants said that they welcomed *furigana*, about one third of the participants, mainly advanced, claimed that relying on *furigana* was not good in terms of their learning. Kim and Nadine (both advanced) mentioned that the texts contained in their language class textbooks were challenging in terms of *kanji* learning because *furigana* were provided only for newly-introduced *kanji* in such texts, and therefore they had to try to retrieve their knowledge of *kanji* that they had been taught previously. Their comments indicate that these learners want to be given a chance to test their *kanji* knowledge rather than being given *furigana* for all *kanji* in texts. Nadine said, "if *furigana* is there, my eyes go to them

straight away." An advanced L1 Chinese student, Julia, reported that her reading speed was slowed down by *furigana* because it made her eyes move up and down.

Discussion

What types of texts facilitate effortless reading?

Quantitative analysis of the participants' free recall and comprehension scores revealed that the current study's participants' understanding of simplified texts was better, in some cases by a statistically significant amount, than their understanding of all the other modified texts. Furthermore, the participants' time per correctly recalled idea unit was the smallest with simplified texts. This means that the participants obtained the gist of the text better and faster when they were reading simplified texts than when they were reading the other modified texts. It is, therefore, safe to claim that the simplified texts best facilitated effortless reading. The easing of vocabulary difficulty in simplified texts was probably an important factor in creating effortless reading. The fact that vocabulary knowledge influences learners' reading comprehension is well supported by empirical findings (e.g, Gardner & Hansen, 2007; Komori et al., 2004; Nation, 2001). The easing of syntax difficulty in the simplified texts also played an important role in creating effortless reading. Klauda and Guthrie (2008) emphasize the importance of syntactic parsing in reading comprehension. As Olivia's comment about short sentences suggests, the simpler syntax in simplified texts can reduce the difficulty of syntactic parsing. Therefore, when learners have not acquired automaticity in syntactic parsing, simplification may be more facilitative than other modification measures.

The results of the quantitative analysis

also suggest that elaborated texts are the second best candidate for facilitating effortless reading, as elaborated texts produced the second highest scores on the two reading tasks and the second fastest reading speeds. A specific explanation for why these two text types facilitated effortless reading better than the other two modified text types is that the former had the modifications embedded in a hard copy. The qualitative findings support this interpretation. The participants mentioned that reading the main text together with either glosses or on-screen pop-ups disturbed the flow of reading. Equally, the problematic issues of reading on a computer screen such as the burden of scrolling up and down and the difficulty of locating where they were reading, which were mentioned by many participants, explained why hard copy texts, whether simplified or elaborated, better facilitated effortless reading.

Does support provided by either embedded modifications or out-of-text reading aids influence affective aspects of learners' reading? If so, what types of texts and reading aids are liked and disliked by learners?

The exit interview comments demonstrated that many participants including some advanced learners enjoyed the effortless reading enabled by the simplified texts. However, it has to be noted that not many participants welcomed elaborated texts and the participants rated their self-perceived understanding of elaborated texts lowest even though their actual scores on both reading tasks were the second highest for the elaborated texts. Therefore, elaborated texts did not always increase the participants' confidence. Regarding the marginal glosses and on-screen pop-ups, the participants pointed out their distracting nature, which is empirically supported by Johnson (1982) as well as

Cheng and Good (2009). Askildson (2011) suggests that lower-level readers use on-line annotations such as pop-ups more than they actually need, and that doing so may cause distraction in the reading process. As for key word provision, the current participants unanimously welcomed it, claiming that it did not spoil the unfolding story but guided their reading. This finding corresponds with the results of studies by Ausubel (1960), Charrow (1988) and Omura (2001). Regarding *furigana* provision, about a third of the participants mentioned that they do not try to remember the pronunciation of *kanji* characters if *furigana* are provided and thus they preferred more selective *furigana* provision. The Japanese Extensive Reading Research Group provides *furigana* for all the *kanji* in their graded readers so that L2 Japanese readers do not have to pause when encountering unknown *kanji* characters. The question of whether selective or non-selective *furigana* provision is better for enhancing learners' motivation and *kanji* decoding ability awaits future studies.

Do learners have a preference between paper reading and reading on a computer screen?

The overwhelming majority of the participants expressed their preference for paper reading over reading on a computer screen. The exit interview comments indicate that this preference comes from the fact that these participants maintain traditional attitudes toward reading media. The participants said they preferred hard copy reading because they can scribble notes and marks on paper, they like the feel of paper, they can locate particular content better on paper, and paper is gentler for their eyes. Garland's (1982) remark, albeit said more than three decades ago, summarizes such nostalgic preferences:

Whenever I rhapsodize about the op-

portunities presented by the electronic media, at the back of my mind I find myself thinking, “Yes, but a book is a book is a book. A reassuring, feel-the-weight, take-your-own-time kind of thing...” (cited in Waller, 1996, p. 370)

The current findings further imply that computer annotations have to be cautiously employed in L2 reading instruction. Due to the ease of accessing online annotations, some learners tend to overuse these reading aids. Roby (1999) argues that excessive lookups of online annotations by learners—what he calls “click-happy behaviour”—should be discouraged (p. 98). This study’s findings indicate that the participants were not efficient when reading texts with on-screen pop-ups. A few participants, who probably could be considered as having indulged in click-happy behavior, mentioned that they opened all pop-ups even though they knew some of the words thus annotated.

Limitations and Implications

The current study has some limitations. First, due to a common problem in Japanese L2 research, the sample size of this study is relatively small. Although there were 155 readings conducted, the study’s generalizability is not high. Future studies with a larger sample size that employ a comparison or control group design would be valuable. Second, in future studies, participants could read whole graded readers that employ various modifications. By employing such graded readers, the effects of key word provision at the beginning of a book and selective *furigana* provision could be tested. Third, the current paper does not address in detail the influence of some important variables, such as topic, L1–L2 pairing, and proficiency level. These topics should be investigated in greater detail in future studies. An implication relevant specifically to fu-

ture Japanese graded reader and pedagogical reading text construction comes from my difficulty in creating modified texts. Finding higher-frequency synonyms to replace lower-frequency TWs was laborious because dictionary definitions are often more difficult than the original word, as mentioned by McKeown (1993). Thus, material writers need to be skilled at explaining lower frequency words in comprehensible terms. Regarding syntactic modifications, I employed an intuitive approach. Crossley, Allen, and McNamara (2011) claim that this approach reflects “psycholinguistic and cognitive accounts of reading” (p. 96). The results of the two reading tasks were as expected: simplified texts were better understood than elaborated texts. However, when the two texts were assessed by a newly-developed online Japanese readability tool (http://jreadability.net/terms_of_use, *Nihongo bunshoo nanido hanbetsu shisutemu*, alpha version), the elaborated texts were rated as easier on four out of the five topics. The average readability scores of the simplified and elaborated texts of four stories were respectively 1.73 and 2.21 (the higher the score, the easier the text). It has to be taken into consideration that this judgement tool for pedagogical texts is still under development. Nevertheless, this puzzling phenomenon suggests the need for caution in employing traditional readability formulas for judging text difficulty in the L2 Japanese context.

Conclusions

The study’s findings support the efficacy of modified texts which some authentic text advocates view as inappropriate reading resources. The study also confirmed that simplified texts still play a pivotal role in the L2 Japanese reading context. Specifically, the findings demonstrated that L2 Japanese learners experienced more effortless reading and positive af-

fect with hard-copy simplified texts. They understood the simplified texts better and faster. Furthermore, their confidence and self-perceived understanding with the simplified texts were higher than those of the other modified texts.

Although the participants judged their understanding of elaborated texts to be the lowest, their scores on the two reading tasks were the second best and their reading speed was the second fastest for the elaborated texts. In other words, elaborated texts supported effortless reading better than the texts with marginal glosses and on-screen pop-ups. Therefore, elaborated texts are more suitable than the two other text types, especially for facilitating pleasure reading. However, advanced students' comments in the free recall protocols and exit interviews warn elaborated texts can easily have an unnatural, over-redundant style that some learners find off-putting.

In the context of JSL and JFL, there is a scarcity of graded readers. It is hoped that this study's empirical findings will contribute to our ability to create well-written graded readers for L2 Japanese learners.

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APPENDIX 1. The JLPT (the Japanese Language Proficiency Test)

The JLPT has been offered by the Japan Foundation, and Japan Educational Exchanges & Services for the last few decades. This test is probably the most internationally recognizable test that certifies the proficiency level of non-native Japanese speakers. Level 3 indicates that the speaker has acquired the basic grammar/*kanji* (300 characters)/vocabulary (1,500 words), and has the ability to carry out useful conversations for everyday life whereas Level 2 indicates that the speaker has acquired a relatively high number of grammar/*kanji* (1,000 characters)/vocabulary (6,000 words), and has the ability to converse as well as to write/read about general topics. The JLPT was revised in 2010. Unfortunately, the vocabulary content for each level of the new JLPT has not been made public. Therefore, many researchers in the context of L2 Japanese still use the former JLPT standard.

APPENDIX 2. Short answer reading comprehension test (sample of half of a test)

Reading Comprehension Test for

世界中に平和の種まきたい
証言通じ被爆の実相後世へ

Please answer the following questions

1. Where was the author born? ()
2. Where did the author work after finishing college? ()
3. Who did the author work with? ()
4. Why could the author put up ‘がまんすることができた’ with some hardships such as food shortages and wearing unflattering uniforms? ()
5. What did the parents of the author and her fiancé decide when they found out her fiancé would come back to Hiroshima in August, 1945? ()

APPENDIX 3. The previous-vocabulary-knowledge test (sample of a part of one test)

Previous-Vocabulary-Knowledge Test (Topic: Good Rival)

Please circle the right answer regarding your previous knowledge of the following words from the text you just read.

…進級(しんきゅう) (= ~年生(ねんせい)になること)

- | | |
|---------------------------------------|----------------------------|
| 1. I knew the word | 2. I think I knew the word |
| 3. I don't think that I knew the word | 4. I didn't know the word |

…言葉(ことば)を交(か)わす (= 話(はなし)をする)

- | | |
|---------------------------------------|----------------------------|
| 1. I knew the word | 2. I think I knew the word |
| 3. I don't think that I knew the word | 4. I didn't know the word |

お互(たが)いの (= ふたりの)

- | | |
|---------------------------------------|----------------------------|
| 1. I knew the word | 2. I think I knew the word |
| 3. I don't think that I knew the word | 4. I didn't know the word |

APPENDIX 4. Linguistic features of the texts

Linguistic features of 5 texts	Average for Authentic Texts (Texts with marginal glosses or on-screen pop-ups)	Average for Simplified Texts	Average for Elaborated Texts
Characters/letters	555.8	874.8	1490.6
Words	220.4	273.6	427.2
Sentences	14.4	31.4	41.4
Paragraphs	4.4	7.6	7
Sentences per passage	3.48	4.26	6.8
Characters per sentence	42.2	27.84	36.14
Chinese characters (%)	29.2	20.8	21.2
<i>Hiragana</i> syllabary (%)	62.2	70.2	71
<i>Katakana</i> syllabary (%)	7	6.8	6
Alphabet letters (%)	0.2	0.4	0.2

Note. On average, 11% of the total words in each text were simplified/elaborated/glossed/contained in pop-ups.

APPENDIX 5. An example text with *kanji* annotated by *furigana*

The following is an example of how *furigana* appears in a Japanese text.

せんじつ しさつりよこう おりつうせつ かん
先日ヨーロッパへ視察旅行をした折痛切に感じたのは、
けいざいじょうきょう きゅうそく あつか こうど せんもんしよく
その経済状況の急速な悪化である。かなり高度な専門職
つ わたし ゆうじん すうにん そうきたいしよく かんこく
に就いていた私の友人の数人が、早期退職を勧告された
か、あるいはその可能性に危惧を抱いていた。