Trial Service of Easy Japanese News on the Web

We have been studying news services provided in simplified Japanese for foreign residents in Japan who have difficulty understanding daily news in Japanese. We started a trial news web service in easy Japanese on the “NEWS WEB EASY” web site in April 2012. The service is intended to be a way for us to study the effectiveness and problems of such services in a real setting. In this paper, we outline the easy Japanese for news. We explain the characteristics of the web service and elaborate on the rewrite assistant tools that were specially developed to enable different workers to rewrite news having consistent quality. We analyze the easy Japanese news and report that the intended quality of easy Japanese was preserved across different workers.

1. Introduction

According to statistics from the Ministry of Justice, the number of foreigners residing in Japan (number of registered foreign residents) has been increasing since the Second World War, and it numbered 2,078,480, or 1.63% of the total population, at the end of 2011. As a fraction of the total population, this is not particularly high compared with countries in Europe and America, but there are areas in Japan where the concentration of foreigners is comparable to that of Europe and America; for example, it exceeds 10% in Shinjuku Ward in Tokyo.

Few foreigners in Japan are able to speak Japanese at a native level, and the need to provide foreigners with adequate information is a major issue. Many are hindered by language barriers and experience inconveniences every day. Also, according to surveys taken after the Great East Japan Earthquake, some foreigners experienced confusion and distress that was exacerbated by their inadequate understanding of the language. There are also fears that if a major disaster were to occur in an area with a high concentration of foreign residents, like Shinjuku, the distress of the foreign residents could contribute to instability in the overall area. Providing adequate information to foreign residents not only contributes to their security, it contributes to the safety and security of the whole region, including Japanese residents.

Ideally, information would be provided to foreigners in their own native languages. In fact, multi-lingual broadcasts and other such services already exist for some languages. In addition, some regional governments maintain Web sites in various languages besides Japanese. For example, the Kanagawa Prefecture Web page provides daily life and disaster information in various languages as well as in simplified Japanese, and NHK provides domestic broadcasts in English, Chinese, Korean, Spanish, and Portuguese. The trouble is that foreign residents in Japan come from some 190 countries, and many of them are left in the dark because services are in only five languages. On the other hand, catering to all foreigners would require a huge amount of translation and would be too difficult because of the huge costs and labor involved.

Because of this, the idea of providing information in simplified Japanese that foreigners can understand, rather than their native languages, has gained attention. This idea is backed by the fact that many foreigners can understand simplified Japanese and that many of them would like simplified Japanese in addition to their native language. In fact, recent surveys have indicated that more foreigners in the country understand Japanese better than English. Many foreigners also expressed a desire for information in simplified Japanese in surveys taken after the Great East Japan earthquake.

Examples of research and practice in presenting information in simplified Japanese include a proposal to provide information in easy Japanese after the Great Hanshin-Awaji Earthquake and research on providing local government documents in simplified Japanese. In particular, use of simplified Japanese has been spreading after the Great East Japan Earthquake, thanks in part to workshops held by regional governments and other initiatives.

Considering the above, we have been researching the idea of giving useful information to foreigners by providing general news in simplified Japanese. We first proposed a standard for rewriting news into Easy Japanese and reported on how a text-based service on the Internet would be appropriate for providing news in Easy Japanese. We conducted reading comprehension experiments with foreign students using news scripts rewritten according to the proposed standard. The results confirmed that the approach was particularly effective for students at an intermediate or lower level of Japanese ability. In preparation for the actual service, we proposed a rewriting method pairing NHK journalists with Japanese instructors and developed a system that supports them in performing the work efficiently. Based on these research results, we established the “NEWS WEB EASY” public trial site on the Internet in April 2012 and began providing news in Easy Japanese.

In this article, we report on the design policies and details of Easy Japanese for News, on the features of the trial Web service, and on two systems (a Rewriting Support Editor, and an Example Presentation System) developed to ensure the consistency of the news rewritten by multiple workers. We also analyze the news provided on the trial site and report on how we create Easy Japanese that is consistent in its style and other features.

*1 Population based on the Basic Residents Register.

*2 The public trial is being done jointly by the News Department and the Broadcasting Culture Research Institute.
2. Easy Japanese for News

2.1 Rewriting Policies for Easy Japanese

Rewriting with the aim of simplifying text has been proposed for many languages. As described above, simplified Japanese has been used during times of disaster and for public documents. There are also several versions of easy English, including Basic English from Ogden12), Voice of America’s (VOA) Special English to bring American culture and international and domestic news to those studying English, and Plain English for writing documents and publishing corporate information.

The standards for writing simplified Japanese and simplified English have common rules, such as making individual sentences shorter, using simple vocabulary, using the active rather than passive voice, and avoiding double negatives. These can be considered general rules that do not depend on language or genre, so we used them as criteria for rewriting Japanese news. We also adopted the standards for questions appearing in the Japanese Language Proficiency Test (JLPT)13), thereby taking foreign residents who are studying Japanese into consideration. The JLPT is divided into levels, from introductory (Level 4) to proficient (Level 1)13. The vocabulary and grammar points at each level are stipulated in the standards for JLPT questions. Levels 4 and 3 are introductory, and we decided that the Easy Japanese for News should include vocabulary and grammar up to Level 3. We also eliminated idioms that only appear in news in favor of ordinary expressions as much as possible.

In summary, we defined Easy Japanese for News based on general rules, the standards for questions appearing in the JLPT, and on rewriting idioms into ordinary expressions. However, we found these principles to be too strict for the task of rewriting actual news scripts, and after further study, we modified the criteria somewhat. The rewriting policies are explained below, including principles and exceptions in the areas of vocabulary, grammar, quotations, and context.

2.2 Vocabulary

The vocabulary for Levels 4 and 3 of the JLPT question standards includes approximately 1,600 words. In principle, news is rewritten using vocabulary within this range. Most of these 1,600 words are used in everyday life, but news focuses on topics such as events, accidents, politics, the economy, science, sports and weather, and it contains many words that are not included in the vocabulary. Some examples include: “settai” (business entertainment), “koukyoujigyou” (public works), “hoseiyosanan” (revised draft budget), and “Odairisama” (honorific for the Emperor). These can be rewritten if there are suitable easy words, but this is not always the case.

For example, “settai” could be rewritten as “gochisou suru” (to treat to a meal), but in the news “settai” usually carries the implication of “treating in hopes of securing some other (illegal) return,” so simply rewriting it as “gochisou suru” does not convey the full meaning. “Koukyoujigyou” expresses a broad concept, including construction, policies and other initiatives, but it is difficult to find a suitable easy Japanese word. The same applies for “hoseiyosanan” and “Odairisama.” “Hoseiyosanan” is a specialized term used in politics, and “Odairisama” is a special cultural word for which there are no suitable easy Japanese word. News reports have many more such words with specialized or broad meanings, or ones that are related to culture or a particular field, and these words are difficult to rewrite using easy words.

Because of this, we add explanations using easy Japanese on the trial Web service. The explanations include a dictionary definition or an example as an adjectival modifier. They are described in detail in Section 3.

2.3 Grammar

Here, we discuss principles and important points related to grammar, including sentence length, passive voice, and idiomatic expressions.

(1) Sentence length

News attempts to convey much information in a short time, so its sentences tend to be long. Long sentences often have complex dependency relationships, so shortening them is an effective way to simplify them. We decided that, in principle, sentences should be 50 characters or less. However, care must be taken because shortening sentences simplistically can result in changes to the meaning. For example, consider the following sentence:

「AはBを誘拐し、監禁し、けがを負わせた疑いで逮捕されました」

(“A was arrested on suspicion of abducting, confining, and injuring B”)

And dividing it simplistically as follows:

「AはBを誘拐しました。また、監禁しました。そして、けがを負わせた疑いで逮捕されました」

(“A abducted B. Then confined B. Then was arrested on suspicion of injuring B”)

The original sentence does not say that A actually ab ducted and confined B, but that there was suspicion of such, whereas the divided sentences indicate that these things actually happened. The divided sentences overlook that “abducted” and “confined” are dependent on “on suspicion”. When shortening sentences, care must be taken with these sorts of dependencies so that the original meaning is not lost.

(2) Passive voice

The meaning is indirectly conveyed with the passive voice, and many references on writing recommend using the active voice instead and writing more directly. In particular, the “-reru” and “-rareru” passive forms in Japanese are also used for expressing potential, volition, and respect, and they can be confusing for Japanese learners.

For these reasons, passive voice sentences are rewritten in the active voice as often as possible in Easy Japanese for News. The passive voice, however, must be used in...
cases when the subject is the victim of an incident, such as “money was stolen,” or “head was struck”. Also, the active voice cannot be used when no explicit subject is mentioned in the original. For example, the sentence, “The design from the Japanese Architects Group was selected from among the roughly 120 applicants,” does not mention who did the selecting, so the sentence cannot be rewritten in the active voice.

(3) Idiom

News scripts often have special idiomatic expressions, such as “…to shite imasu” (“take the position of…”) “… to mirarete imasu” (“is seen as…”), and “kono jiken ha…shitamono desu” (“This incident is …”). Such expressions are used specifically in news to express hearsay or conjecture and almost never appear in daily conversation. Hence, they should be rewritten using ordinary expressions as often as possible. For example, an expression such as,

「警察は〜と言っています」

can be rewritten indicating who did what, as in,

「警察は〜と言っています」

### 2.4 Quotations

Quotations in corner brackets appear often in news scripts. These are rewritten, depending on whether the expression itself is important or not. In particular, verbal errors, emotional expressions, slogans, colloquialisms, and jokes cannot be rewritten, even if the Japanese is difficult. In these cases, explanations are added. For example, in the sentence,

「フランス語で乾杯を意味する『サンテ』と言いながら〜」

(“While saying ‘sante’, meaning “cheers” in French,...”)  

“sante” is left as is, and an accompanying explanation is used, as in,

「フランス語で乾杯という意味の『サンテ』と言うながら〜」

(“While saying ‘sante’, which means “cheers” in French,...”)  

On the other hand, when the content rather than the expression in the quotation is important, it is rewritten in Easy Japanese according to the usual standards. This is possible in most cases.

Next, let us discuss the use of “desu” and “masu” forms in quotations. Unlike newspapers, broadcast news uses “desu” and “masu” forms in descriptive text. Foreigners also learn these forms first when they begin to study Japanese, which helps with Easy Japanese. Original quotes sometimes use the “da” and “de aru” (less formal) forms, so in principle, these are rewritten into “desu” and “masu” forms in Easy Japanese. However, if the change alters the impression given by the quotation, such as in a quote from a criminal or suspect, the “da” and “de aru” forms are left as is. For example, a terrorist’s statement:

「イラク戦争に関与したイギリスに対する復しゅうだ」

(“Revenge on England for joining in the Iraq war!”) could be rewritten as:

「イラク戦争に関与したイギリスに対する復しゅうです」

(“Revenge shall be taken on England for its participation in the Iraq war.”) but it would change the impression conveyed of the terrorist. So the statement is left as is.

### 2.5 Context

Most news combines information to convey a single core fact or piece of information, rather than simply listing data. To accomplish this, a clear, logical flow with clear relationships between sentences is important. For Easy Japanese, we rearrange this context to clarify the logical flow.

In rewriting using Easy Japanese, the relationships among sentences may become unclear when long sentences are divided up into shorter ones or when the passive voice is changed to the active. To prevent this from occurring, we process the sentences as follows.

(1) Long sentence partitioning

Additional information is embedded in long sentences in the form of modifiers. Sentences can be simply separated and made into equivalent sentences with their own subjects and topics, but this can make it difficult to see what is important. To clarify what is important, these sentences are further processed by changing their order, removing incidental content, and adding conjunctions that express the relationships between them.

(2) Changes in voice

When the voice is changed from passive to active, the subject changes and might no longer match the subjects in the preceding and following sentences. This could obscure the relationships between the sentences. In such cases, the subject in a preceding or following sentence is changed or the sentence is deleted.

### 2.6 Deletions

Added explanations may make the rewritten text be longer than the original. However, increasing the length places an additional burden on readers, so the following measures are used to delete some sentences and make the scripts shorter than the original.

(1) Eliminate repetition

A script of a news item is normally composed of a lead and the main text. The lead is the opening sentence of the script, and it contains the main point. The main point is extracted from the main text, so it is often repeated in the main text. Such duplicated information is eliminated in Easy Japanese. In some cases, the lead itself is deleted.

(2) Eliminate incidental information

As discussed in the section on context (Section 2.5), news scripts concentrate a lot of information into each sentence. When sentences are rewritten into numerous short sentences, the relationships among them may be difficult to understand. In such cases, we eliminate incidental information. In some cases, entire sentences or paragraphs of information are eliminated if they are deemed incidental to the whole topic.

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* Sentences not containing corner brackets.
2.7 Example of Easy Japanese

News in Easy Japanese does not completely conform to the range of ability encompassed by JLPT Level 3, and it can include items from Level 2 as well. We expect that foreigners studying for Level 2 (a pre-intermediate level) should be able to understand most of the content.\(^5\)

The following is an example of a Japanese news script rewritten according to our rewriting policies.

[Original news script from the NHK Web page]

3日は、人気キャラクターのドラえもんの誕生日からちょうど100年前にあたり、原作者の藤子・F・不二雄さんが晩年を過ごした神奈川県川崎市はドラえもんに特別に住民票を交付して祝いました。

平成8年に亡くなった藤子・F・不二雄さんの人気漫画「ドラえもん」は2112年9月3日に誕生したとされ、3日はちょうど100年前にあたります。

藤子さんが晩年を過ごした川崎市からドラえもんに特別住民票が交付されることになり、川崎市多摩区にある記念のミュージアムで、阿部孝夫市長からミュージアムの伊藤善章館長に、縦約70センチ、横約50センチのドラえもんの絵柄が入った特別な住民票が手渡されました。

[Translation]

On the third of this month, it will be exactly 100 years before the birthday of the popular character, Doraemon. This was celebrated by issuing a special citizenship card to Doraemon in the city of Kawasaki, in Kanagawa Prefecture, where Doraemon creator Fujiko F. Fujio lived.

Fujiko F. Fujio who passed away in 1996, created the popular cartoon, and in it Doraemon was born on September 3, 2112, exactly 100 years after the third of this month.

The city of Kawasaki, where Fujiko F. Fujio passed his later years, issued a special citizenship card to Doraemon, and the Mayor of Kawasaki, Mr. Takao Abe, personally handed the special citizenship card, measuring 50 by 70 cm and decorated with a Doraemon pattern, to Yoshiaki Itou, the curator of the commemorative museum, which is in the Tama ward of Kawasaki.

[Easy Japanese News script]

有名な漫画のキャラクター、ドラえもんは、2112年9月3日に生まれたことになっているため、3月3日は、100年前の誕生日になります。

ドラえもんを描いたのは、平成8年(1996年)に亡くなった藤子・F・不二雄さんです。

藤子さんは晩年、神奈川県川崎市に住んでいて、川崎市には藤子さんの絵を集めた記念館もあります。

このため、川崎市はドラえもんの100年前の誕生日を祝うことにしました。

川崎市の市長が記念館の館長に、縦約70cm、横約50cmのドラえもん絵柄が描いてある特別な住民票(=住民の名前や生まれた日などを記録する書類)を渡しました。

[Translation]

The popular cartoon character Doraemon, was born on September 3, 2112, so September 3 this year is exactly 100 years before his birthday. The creator of Doraemon was Fujiko F. Fujio, who died in 1996.

Fujiko F. Fujio spent his last years in Kawasaki, in Kanagawa Prefecture, where there is a memorial museum with a collection of his drawings and other items.

Because of this, the city of Kawasaki decided to celebrate 100 years before Doraemon’s birthday.

The mayor of Kawasaki gave a special resident’s card (a document recording information such as name and birth date of a resident), measuring 70 by 50 cm and with a Doraemon illustration, to the curator of the museum.

### 3. Web Service Features

The rewriting process described in Section 2 is the main component of producing Easy Japanese for News scripts. However, some news cannot be made easier by changing its expressions. In such cases, Web features are utilized to make the news easier to understand. Below, we describe

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\(^5\) Approximately the level needed to pass the N3 test in the new system.

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**Figure 1: NEWS WEB EASY screen shot**

*Link to original script*

*Dictionary*

*Speech playback*

*Phonetic markup or ruby*

*New Years day*
the techniques used on NEWS WEB EASY. A screenshot of NEWS WEB EASY is shown in Figure 1.

3.1 Furigana
Reading Chinese characters (kanji) can be difficult for foreigners, so all kanji are accompanied by furigana (phonetic markup, or “ruby”).

3.2 Dictionary
Easy vocabulary is used as often as possible, but difficult words are retained in some cases, as discussed in the vocabulary section (Section 2.2). For such cases, a dictionary definition is displayed on the Web screen. Currently, the explanation is from an elementary-school dictionary and it appears when the cursor is placed over a difficult word of Level 2 or higher105).

3.3 Commentary
There are limitations to using a dictionary to describe difficult words. In particular, new words or specialized phrases often appear in the news, and we add explanations in the main text for such cases. Specifically, we add explanations in parenthesis, as in the example above: “resident’s card (a document recording information such as name and birth date of a resident)”, or embellishing phrases. In some cases, we add separate explanatory sentences. Note that if too many embellishing phrases are used, the sentence may become difficult to understand.

3.4 Word Coloring
The names of places, companies, and people often appear in news scripts. Most names do not appear in a dictionary, and it is troublesome to attach explanations to all of them because there are so many. For this reason, we display such names in color, e.g., purple for place names, pink for people names, and sky-blue for organization or company names. This allows readers to determine what a kanji string stands for from its color, even if they do not know the specific meaning.

3.5 Speech Synthesis
We added a function that reads out the text using speech synthesis, for foreigners who are not skilled at reading but are capable of listening. The speed of recitation is set to somewhat slower than normal.

3.6 Link to the Original News Script
A link to the original news script is added to the Easy Japanese news script. Many of the original scripts have attached video or audio that can be helpful for understanding. “Kiritanpo” is not a word that can be explained easily, but a video showing someone eating kiritanpo beside a fire will immediately let the reader can see that it is a food item that is roasted on an open fire.

4. Daily Operations and Rewriting Support Systems
In April 2012, we began a public trial of providing news in Easy Japanese on the Web. Every day, excluding weekends and holidays, ordinary news scripts were rewritten into Easy Japanese and presented. Initially, we presented one or two news scripts per day, but in August, after reviewing and revising the workflow, we began providing three scripts per day. The daily operations of the trial are described below.

4.1 Operational Systems and Procedures
The rewriters must understand what Easy Japanese is and be able to evaluate the content of news scripts accordingly. When the trial began, there were very few persons who understood both of these aspects, so a collaboration was undertaken between veteran Japanese teachers who had learned Easy Japanese and experienced journalists. These experts work in pairs (work teams): the Japanese teacher rewrites a script into easier text, while the journalist revises the content. Currently, one work team does the rewriting each day. Besides the team, an editorial desk (journalists) selects news scripts and performs a final check, and technical staff create the Web pages.

Rewriting is done according to the following procedure:
(1) Select news script
(2) Rewrite script (by Japanese teacher and experienced journalist)
(3) Check rewrite (by editorial desk)
(4) Create data for furigana, dictionary, and coloring
(5) Create data for speech synthesis
(6) Create final page

The Easy Japanese news scripts are designed with foreigners in mind, but as described in the rewriting policies (Section 2.1), they are done according to general rules. This means they are also easier for Japanese readers to understand. Because of this, NEWS WEB EASY was developed to be a service for children as well as foreigners. Thus, each day, one script with a major topic from the previous day and two scripts of interest to both foreigners and children are selected to be rewritten.

Each morning, news scripts are selected and rewritten into easy Japanese. After checking by the editorial desk, supplementary data including furigana, dictionary, and speech synthesis are created, and finally the scripts are posted on the Web page.

The work entails the use of many computer support systems. The systems for supporting rewriting, which consumes the most time, are described below106.

4.2 Rewriting Support Systems
There are two issues with the rewriting. The first is the uniformity of the Easy Japanese. There are multiple work teams, and they change every day, but the level of the Easy Japanese had to stay the same no matter which team does the rewriting. Initially, we found that the level tended to vary because rewriters had not yet become accustomed to the work. The second issue is “back writing”. The Japanese teacher would simplify an expression that is mainly used in the news, and the journalist would revise it back to the original, more news-like expression. Then the Japanese teacher would return it to the simpler expression. The work could not proceed with the members of the team “back writing” repeatedly in this way.

We developed a rewriting-support editor and an
example presentation system to resolve these two issues.

(1) Rewriting support editor

The script is revised back and forth between the Japanese teacher and the journalist, and the final check is done by the journalist. We developed a rewriting-support editor to help the team with their work.

The editor screen displays the original and the previous rewritten version of each sentence for reference. Words in the sentences are displayed in color according to their level of difficulty. Colors correspond to the JLPT level, with Level 1 words in dark red, Level 2 words in yellow, high-level words (not specified in the JLPT question standards) in bright red, Level 3 in green, and Level 4 words in blue. The work team focuses on rewriting difficult Level 1 (dark red), Level 2 (yellow), and high-level (bright red) words. On a different editor screen, the sentence lengths (number of characters) are displayed in different colors, and sentences over 80 characters are displayed in red in order to draw attention to them.

This system displays difficult words and sentences with colors and numbers according to the rewriting policies, so all the work teams can pay attention to the same issues. This effectively reduces the variation in the Easy Japanese. Moreover, any increase in word difficulty or sentence length introduced by the rewriting is illustrated in color and numerically, and this helps to reduce the amount of “back writing” from Easy Japanese to the original.

The rewriting support editor also shows the overall level of difficulty of the scripts. The level of difficulty is the product of the difficult-word rate (the ratio of Level 1, Level 2, and advanced words to the total number of words in the script), the average sentence length, and the script length. Smaller values for each of these factors indicate an easier script, so smaller difficulty values indicate easier overall scripts.

Besides the individual sentences and words, the teams try to make the overall script easier. Figure 2 is a screenshot comparing the original news script with rewrites by the Japanese teacher and the journalist. The script rewritten by the Japanese teacher is longer than the original because of the added explanations, but is shorter after it is revised by the journalist. The colors of the words reveal that the rewrite by the Japanese teacher reduced the number of difficult red and yellow words and increased the number of easy green and blue words. Also, the overall level of difficulty of the script decreased from 5,521 to 1,773.

(2) Example search system

We also developed an example search system that automatically stores Easy Japanese and original news scripts. It enables instant searches for rewritten examples of various expressions such as “…to shite imasu”. Referring to these examples not only increases rewriting speed, it also reduces the variation among the rewriting teams.

The example search system was developed to support NHK’s international broadcasts which are translated into 17 languages. Since, rewriting text into Easy Japanese can be considered a form of translation, we thought the system would be effective for this purpose as well. In fact, the number of scripts in its database has increased, as
has the variety of expressions that can be found, and it is being used more frequently.

5. Analysis of Easy Japanese News

We analyzed the news scripts presented in the public trial. The analyzed news scripts included 512 original and Easy Japanese news script pairs published between April 2, 2012 and January 21, 2013. Here, we discuss the characteristics of the Easy Japanese news scripts and the effectiveness of the support systems based on the results of the analysis.

5.1 Characteristics of Easy Japanese News Scripts

Table 1 compares the original and Easy Japanese news scripts. The values in the table are averages over all 512 scripts. In this table, “Script Length” shows the average lengths of the news scripts (number of characters), and “Sentence Length” shows the average sentence length for each script (number of characters). Ratio indicates the difficulty ratio of the Easy Japanese script relative to the original script.

The Script Length ratio indicates that the Easy Japanese news scripts were 73% of the length of the original news scripts. This is a result of eliminating duplicated and incidental information. The 64% reduction in sentence length shows that the goal of keeping sentences at or below 50 characters was achieved. Shorter sentences suggests that the syntactic complexity of sentences was also reduced. As stated earlier, the difficult-word rate is the ratio of Level 1, Level 2, and advanced words relative to the total number of words. The original news scripts contained 26.6% difficult words, while the Easy Japanese news scripts contained 13.2%, a reduction by half. A dictionary explanation is also provided for the remaining words. This means that the number of words readers cannot understand is likely to be significantly reduced compared with the original news scripts.

Table 1: Table 1: Comparison of original and Easy Japanese news scripts

<table>
<thead>
<tr>
<th></th>
<th>Script Length</th>
<th>Number of sentences</th>
<th>Sentence Length</th>
<th>Difficult word rate</th>
<th>Script level of difficulty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Original script</td>
<td>565.5</td>
<td>8.9</td>
<td>66.2</td>
<td>26.6</td>
<td>10,093.4</td>
</tr>
<tr>
<td>Easy Japanese</td>
<td>414.6</td>
<td>10.1</td>
<td>42.1</td>
<td>13.2</td>
<td>2,318.8</td>
</tr>
<tr>
<td>Ratio</td>
<td>0.73</td>
<td>1.13</td>
<td>0.64</td>
<td>0.50</td>
<td>0.23</td>
</tr>
</tbody>
</table>

* Unit for script length and sentence length is number of characters

5.2 Differences Depending on Workers

Two Japanese teachers and three journalists were paired into six different work teams that did all of the rewriting. Table 2 shows the results of Table 1 broken-down for each team. The values in the table are average values, but the content and number of news scripts handled by each team varied.

Table 2 indicates there were variations in script length and number of sentences depending which team did the rewrite. Some amount of variation due to the different pairings and news script content can be expected. An issue for future consideration is whether to establish a standard for script length.

On the other hand, the sentence lengths and difficult-word rates were very consistent across the different pairings. This shows the effectiveness of the support system that keeps track of the sentence lengths and difficult word rates.

6. Conclusion

Since beginning the public trial in April, 2012, we have received many favorable comments from users within and outside Japan. The comments show that the trail service has generated a great deal of anticipation from users studying Japanese. We intend to continue our research and development toward a full-scale service.

There are two main issues to be addressed. The first is how to improve the Easy Japanese. Previous evaluations suggested that the current Easy Japanese news scripts are effective for foreigners with a pre-intermediate level of Japanese9). We are conducting comprehension tests.
with foreigners and elementary and intermediate school students to confirm that Easy Japanese is effective for these groups\(^\text{17}\). We are also planning to conduct periodic evaluations using the news scripts on NEWS WEB EASY and to perform detailed tests to improve Easy Japanese.

The other main issue is how to optimize the rewriting process. A full-scale service will need many scripts to be rewritten. However, it will not be possible to significantly increase the labor or budget, so it will be vital to add automatic processing technologies to the rewriting-support system. We have already begun studying automatic processing that can help the Japanese teacher to find easier expressions that do not change the meaning significantly, and we are currently studying methods for partitioning sentences and doing partial rewrites\(^\text{18}\). We also plan to study the use of machine translation in rewrites.

(Hideki TANAKA)

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