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Iwasaki Linguistic Circle

c/o Eigo-senko kyoiku junbishitsu  
Tokyo University of Foreign Studies  
3-11-1 Asahi-cho, Fuchu-shi  
Tokyo 183-8534  
Japan

Shoji Miyai, Chairman

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email: iwaken.info@gmail.com

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# On J. M. Dixon and His Dictionary Together with a Couple of Examples of Its Influence on Contemporary Dictionaries

MASAKO SUZUKI

## 1. Introduction

This paper aims to show some details of who J. M. Dixon was and how it was that he compiled a dictionary that is still in print today and this dictionary has had influence on proverb descriptions in English-Japanese dictionaries published in the last one hundred years<sup>1)</sup>.

The vast majority of proverbs have remained unchanged since their first publication until the present day. This is quite natural since the meaning of the proverbs is stable and unchanged and neither has the English language changed. However, there are proverbs, which, for a variety of reasons, should be updated. To ascertain whether the descriptions of these proverbs were kept unchanged or were changed over the years, I studied 18 English-Japanese dictionaries published in the last one hundred years (Suzuki). The result was both yes and no. While there were some changes properly made, there were some cases where no changes have been made when there should have been: firstly in order to meet changes in English and secondly in order to correct the “mistakes” made in earlier days. Where these changes were not made and mistakes not corrected, I found the considerable influence of *Dictionary of Idiomatic English Phrases* (hereafter *DIEP*) compiled by James Main Dixon.

## 2. James Main Dixon (1856–1933)

For such a well-known person credited with compiling dictionaries

still revered by scholars a hundred years after publication, there is surprisingly little biographical information readily available to the layman making a cursory search. There is very little information about his parents, siblings, wife and children, if any. This is not to say that the information cannot be found anywhere but a simple search on the Internet or over general reference books will only reveal the bare bones which are: he was born in Scotland and graduated from the University of St. Andrews in 1879 and was appointed scholar and tutor of philosophy there in the same year. However, in the same year, 1879, he was requested to come to Japan to be a professor teaching English at Kobu-Dai-Gakko, the Imperial College of Engineering which became the Faculty of Engineering at the Imperial University of Japan in 1886. Amongst his students, there were Hidesaburo Saito (1866–1929), who wrote books on English grammar and compiled dictionaries, Yoshisaburo Okakura (1868–1936), who edited *Kenkyusha's New English-Japanese Dictionary on Bilingual Principles*, and Soseki Natsume (1867–1916). In 1892, he moved to America together with his American wife and taught English literature and later Oriental studies and comparative literature in American universities until he died in 1933.

The reason why Dixon came to Japan when he was just appointed scholar at the University of St. Andrews and when he did not have much experience of teaching at the age of 23, was that his elder brother, William Gray Dixon, was a professor teaching English at the Imperial College of Engineering, and it was this position that James took over from his brother (Dyer 4), from January the 1st in 1880 (Omura 147). According to *the Annals of the Free Church of Scotland*<sup>3</sup>, James had 2 brothers and 4 sisters. The eldest sister, Jane Gray Dixon who was referred to as Mary Jane Gray Dixon, was also living in Tokyo at the same time as James and in 1885 she married Cargill Gilston Knott, who was a professor of Physics and Engineering at the Imperial University. James himself married in 1885 an American, Clara Belle Richards, who was teaching at the Imperial Conservatory of Music.

While he lived and taught in Japan, he published several “books” on English language and literature. These “books” were mostly his written teaching material including *DIEP* which started as a list of idiomatic phrases that his students collected from works of fiction. The list eventually grew to over 3,000 entries. James at 23 might have been young to be professor at the Imperial College of Engineering but he appears to have been hard-working and aggressive with a wide-ranging interest in everything about him including the Ainu and Japanese etiquette.

### 3. Review of the *Dictionary of Idiomatic English Phrases (DIEP)*

There seems to exist at least three versions of *DIEP* as follows.

#### 3.1. *Dictionary of Idiomatic English Phrases (DIEP) in Japan*

The full title of the dictionary published in Japan by Kyoyekishosha is *Dictionary of Idiomatic English Phrases Specially Designed for the Use of Japanese Students*, and this title explains that the dictionary was basically made for his students. It seems the dictionary was highly recommended even then. A book review magazine *Geppyo* reviewed this dictionary in March 1888 and said that the dictionary is quite valuable for English researchers and its reasonable price makes it easier for students to purchase and use (113). It must truly have been popular amongst Japanese students studying English at that time, as some following phrase books name his dictionary as one of their reference books (Eigo Kyojyu Kai, Kanda & Nannichi).

It seems that the publishing year of the first edition has been ambiguous; some mention 1887 and others 1888 (Takenaka 28–29). The fact is that 1887 was the year of acquiring the copyright license and that 1888 was the year of printing and selling of the first edition (Toyoda 114–115).

The size of the book is about 12x18cm, and the contents of the first edition are as follows: Title Page, Preface, Explanation of Signs, Dictionary of English Idioms, Supplement, Appendixes, List of Authors Quoted, and Colophon. In all there are 352 pages. From the second

edition an Appendix of 25 pages was added. Idioms are listed alphabetically according to their headwords. One remarkable point with this dictionary was signs he used; “P. Good Prose, C. Conversational, F. Familiar, and S. Slang.”

### 3.2. *Dictionary of Idiomatic English Phrases (DIEP) outside of Japan*

*DIEP* was not only published in Japan. It was also published by Nelson and Sons with offices in London, Edinburgh and New York. The title was changed from the Japanese edition to *Dictionary of Idiomatic English Phrases* only. Again the publishing year had been unclear, and Takenaka did not conclude the exact publishing year of *DIEP* by Nelson and Sons (30–31). However, it is now available on the Internet and one to look at is a copy published in 1891, and I assume that this year, 1891, is the publishing year of the first edition based on the following facts: Dixon himself wrote in his biography “My *Dictionary of English Idiomatic Phrases* [*sic.*] appeared in Tokyo in 1888, and was published by the firm of Nelson and Sons in London and New York in the following year” (Dixon 1895), and the Bibliography of the *Oxford English Dictionary* says “Dixon, James M. *Dictionary of Idiomatic English Phrases* 1891” (Simpson and Weiner).

The size of the book is about 14.5x19.5cm, slightly bigger than the Japanese version. Even though the title sounds mostly the same, the preface was rewritten by Dixon himself for the English/American readers. The contents seem mostly the same as well: Title page, Preface, Explanation of Signs, Dictionary of Idiomatic English Phrases, Appendix, and Authors, Anonymous works, and Journals Quoted. There are 384 pages in all. It seems that Dixon did not add any more content to this version, and I have also looked at one copy published in 1896.

As mentioned the preface was rewritten and it was probably edited by the publishing company Nelson and Sons. In other words, the preface of the Japanese version seems a little unprofessional, such as the way he wrote his reference books in the preface. He doesn't use

Table 1 Comparison of the first 10 pages of *DIEP* (1891) and *DIEP* (1888)

	<i>DIEP</i> (1891)	<i>DIEP</i> (1888)
Number of Entries	78	36
Number of Example Sentences	8	17
Number of Quotations	107	23

italics for the titles. This indicates also that the dictionary was originally his material and no other native speakers had read it when it was published in Japan. As for the contents, compared with the original Japanese version published in 1888, it seems that the supplement of the Japanese version was mostly added into the contents, but none of the appendix, which was added after the second edition, was included. Checking the first 10 pages of the *DIEP* published in 1891, it was amended significantly, even only a couple of years later.

Firstly, in the first 10 pages, the number of entries is more than doubled: 9 entries from the supplement of *DIEP* (1888) and 33 new entries. Secondly, the number of quotations is drastically increased, while the number of example sentences, which were probably made by Dixon, is reduced. Ten quotations were taken from the supplement while 3 were deleted from *DIEP* (1888). There are also some amendments, both deleted and added, made in the explanations. This shows clearly that these dictionaries, with similar titles by the same compiler, are different, while the basic structure stays the same.

### 3.3. *English idioms*

There is one more version of *DIEP*, renamed *English Idioms*, but published by the same publishing company Nelson and Sons. Its publishing year is again unclear, and it seems impossible to clarify the year, as its publishing year is not printed on the title page. Some mention 1927 (Omura 147), and others mention 1912 (Deki and Takanashi 215). The oldest publishing year information I could find on the Internet is 1912<sup>3)</sup>, but it could be that it was published earlier. This dictionary is also published as part of Nelson's encyclopaedic library.

The size of the book is much smaller compared to the others, about 11x16cm. Even though the title was changed from *DIEP* (1891), the preface is mostly the same as *DIEP* (1891), just slightly reduced, and the contents stay almost the same. I checked the first 10 pages and there was only one typo, which differs from the earlier copy.

This dictionary whether with the title *Dictionary of Idiomatic English Phrases* or *English Idioms* is still on the market. Other than used books, there are several publishing companies reprinting this dictionary with both titles as it is now free from the copyright, and they are also available as e-books. Moreover, in 1939, *English Idioms* was also published in Braille.

### 3.4. Summary of the above three versions

As explained in the above, Dixon's dictionary has at least three versions in English. The following table shows how similar/different they are.

For his first version, as he mentioned in the preface he had to supply the supplement to cover deficiencies in especially the first few letters of the alphabetical list (Dixon 1888). Appendixes of *DIEP* (1888) consist of "old sayings", "equivalent expressions", and "an additional list of such expressions", and that of *DIEP* (1891) "old sayings", "equivalent expressions", and "similar expressions". For *DIEP* (1891) Dixon added two expressions in "equivalent expressions" and deleted one and added two in "similar expressions". In *DIEP* (1888), the complete title of "List of authors quoted" is "a list of authors, anonymous works, and journals quoted in the dictionary", and in *DIEP* (1891) and *English Idioms* "authors, anonymous works, and journals quoted". From *DIEP* (1888) to *DIEP* (1891), 40 entries are added and one deleted, and some entries were corrected to follow in alphabetical order. In *English Idioms*, there are fewer explanations about the entries and 41 entries, both authors and journal titles, were deleted for some reason.

Table 2 Three versions of Dixon's dictionary

	<i>DIEP</i> (1888)	<i>DIEP</i> (1891)	<i>English Idioms</i>
Publishing company	Kyoyekishosha	T. Nelson and Sons	Thomas Nelson and Sons
First edition	1888	1891	1912?
Availability	Not available (Up to 8th edition?)	Still available	Still available
Special editions	None	With Chinese translation (1909)	Braille version (1939)
Size	12x18cm	14.5x19.5cm	11x16cm
Preface	3 pages	3 pages	2 pages
Body text	295 pages	365 pages	271 pages (2 columns per page)
Supplement	44 pages	None	None
Appendixes	2 pages	1 page	None
List of authors quoted	10 pages 225 entries	11 pages 264 entries	10 pages 223 entries
Appendix	25 pages (from 2nd edition)	None	None

#### 4. Reference books used by Dixon

In *DIEP*'s preface, Dixon mentions Kwong Ki Chiu's *Dictionary of English Phrases with Illustrative Sentences* in New York and other cities, including Yokohama, published in 1881, which seems to be the most referred to English idiom book in Japan at that time (Ichikawa 7, Toyoda 101). The dictionary must have gained a certain popularity in Japan, so that it was later re-edited and published with Japanese translation in 1899 and also reprinted in the original in 1901. However, although Dixon has some praise for Kwong's dictionary, he also criticizes it as follows:

The objections to the work are, first, that *British*, as distinguished from *American* phrases, are conspicuous by their absence; secondly, that the arrangement is arbitrary and confusing; thirdly,

that the examples, though apt and good in themselves, do not bear the very useful *imprimatur* of some well-known author's name. They are made for the occasion, instead of having been picked up in reading. A fourth objection to the work is, that it is largely made up of definitions of single words.

(Dixon 1888 preface)

Then as his reference, he names some dictionaries at the end of the preface: They are: Cassell's *Encyclopædic Dictionary*, the *Supplementary English Glossary* of Rev. T. L. O. Davies, Wright's *Provincial Dictionary*, the fourth edition of Dr. Samuel Johnson's *English Dictionary*, and *Slang Dictionary* published by Messrs. Chatto and Windus. Furthermore, he mentions in the preface in *DIEP* (1891) and *English Idioms* "At least eighty per cent of the phrases are freshly gathered".

## 5. Some examples

In this chapter, I will introduce two actual cases, on how the following English-Japanese dictionaries referred to *DIEP*.

### 5.1. "Nine tailors make a man"

Firstly, the proverb, "nine tailors make a man", has some variations in English, such as "nine tailors go to a man" and "three tailors make a man", but the Japanese explanations are basically the same in various English-Japanese dictionaries<sup>4)</sup> published in the last one hundred years. However, this Japanese explanation "nine tailors make one man, as tailors are weak" does not match to that of the English proverb; a gentleman must select his attire from a number of sources (cf. Manser, Speake). As this proverb is not included in *Concise Oxford Dictionary*, the first edition published in 1911, various English dictionaries, which were published before 1915 and were then available in Japan, were checked. Then, *A Dictionary of English Phrases with English and Japanese Explanations* published in 1909 says:

nine (or ten or three) tailors make a man.

A popular saying in contempt of tailors. A tailor is often called

the ninth part of a man.

While *A Thesaurus of English Phrases with Japanese Equivalents* published in 1905 says:

Nine tailors make a man  
a popular saying in contempt of tailors. A tailor is o ten [*sic.*]  
called the ninth part of a man.

Their explanations are identical in English, so they must have referred to the same source. As reference books, both dictionaries name Dixon and Kwong in the prefaces. Kwong did not include this proverb, and *DIEP* says:

Nine tailors make a man  
a popular saying in contempt of tailors. F. A tailor is often called  
the ninth part of a man

There is no doubt that the above mentioned two dictionaries referred to *DIEP*, and thereafter followed various dictionaries in Japan. Why Dixon explained the proverb in this way is impenetrable. I have checked all the reference books, which Dixon named in the preface, but none of them seems to include this proverb<sup>5)</sup>. However, Brewer's *Dictionary of Phrase and Fable*, published in 1898, says "The present scope of this expression is that a tailor is so much more feeble than another man that it would take nine of them to make a man of average stature and strength", so Dixon's explanation must have been reasonable then.

Though, the meaning of the proverb seems to have various stories behind. For example, Brewer introduces a story about an orphan lad who applied to a tailor for alms, and a story about the tolling bell; at the death of a man it is rung thrice three tolls. Manser explains "The original sense was that a gentleman should choose his garments from a wide range of tailors. The expression is also sometimes linked to bell-ringing: a *tailor* being a *teller* or "stroke" in a funeral knell; nine tailors referred to a man (six, a woman; three, a child)".

I am not saying that Dixon's explanation is wrong, but only it seems

an out-of-date idea nowadays. The description in contemporary English-Japanese dictionaries should therefore be revised.

## 5.2. “Pitchers have ears”

Here is one more example, “pitchers have ears”. Usually “little pitchers have long ears” is considered as a proverb, and it means children are apt to overhear. “Little pitchers” here indicate children. Therefore, if only pitchers, then it does not fully make sense. Dixon includes both expressions in *DIEP*. In the 1888-version, he puts “little pitchers have long ears” under “ear” and “pitchers have ears” under “pitcher”. His explanations are as follows:

Little pitchers have long ears – children are able to repeat things which they have listened to. Beware of speaking freely before children. C.

I’ll tell you again, not now. *Little pitchers have long ears* (some smart children are present).

Pitchers have ears — there are listeners who may hear. C. A proverbial expression. See *ear*.

Pitchers have ears, and I have many servants. *Shakspeare*. [*sic.*]

Then in the 1891-version, Dixon changes his explanation a little. No entry under “ear”, but only “pitchers have ears” under “pitchers”.

Pitches have ears — there are listeners who may hear. C. A proverbial expression. Also, “Little pitchers have long ears,” – young persons are quick of hearing.

Pitchers have ears, and I have many servants. — SHAKESPEARE.

The child might be somehow mistaken, or the old woman might have misread the address. But that was unlikely; and if it had been so, surely Miss Gray, knowing that little pitchers have ears, would have corrected the mistake. — SARAH TYTLER.

Dixon’s quotation “pitchers have ears” was used in Shakespeare’s *The Taming of the Shrew*, and Shakespeare also used the expression in

another work *Richard III*, where pitchers clearly indicate children. The usage of “pitchers have ears” could be Shakespeare’s original way of writing based on the proverb “little pitchers have long ears”. There is no entry of “pitchers have ears” but “little pitchers have large/big ears” in various dictionaries (Brewer, Kwong, Manser, and Speake).

Even though the expression “pitchers have ears” could be used in English, it must be somehow related to the proverb “little pitchers have long ears”. Dixon himself combined two expressions to one entry, so he must have sensed some kind of connection there. No one can tell why he decided to prioritize “pitchers have ears” to “little pitchers have long ears”, but I assume the usage by Shakespeare had a certain influence.

There is one more thing to be considered; that is the Japanese translation. *DIEP* has no Japanese explanation, and *A Thesaurus of English Phrases with Japanese Equivalents* does not include these expressions, but *A Dictionary of English Phrases with English and Japanese Explanations* includes both as follows:

Pitchers have ears “Kabe ni Mimi ari” (literally, ears on wall) — there maybe listeners overhearing us: a punning proverb.

Little pitchers have long ears “Kodomo wa Hayamimi” (literally, children are quick-eared) — Little folk or children hear what is said when you little think it.

I cannot say that this was the first Japanese translation ever made, but most of the contemporary English-Japanese dictionaries follow them other than *Saito’s Idiomatical English-Japanese Dictionary* and *Inouye’s English-Japanese Dictionary*, that both only include “little pitchers have long ears”<sup>6</sup>). However, the translation of “Kabe ni Mimi ari” sounds not suitable, as there is the equivalent English proverb to that; “walls have ears”.

There are two problems in their descriptions in contemporary English-Japanese dictionaries. Firstly, whether “pitchers have ears” should be considered/entered as an independent proverb, and secondly how the proverb should be translated into Japanese.

## 6. Conclusion

It is obvious that *DIEP* had, and probably still has, a great influence on the dictionaries and researchers that followed. The way Dixon collected phrases and presented expressions alphabetically must have been sobering at that time, and this could be one reason why his dictionary is still valued now. However, readers are not aware of the situation, how Dixon produced this dictionary. He was young and inexperienced in a foreign country without having so many English-speaking colleagues/friends, while he had to teach English as a professor to elite students at the university. His work is definitely marvelous, but again readers are not aware of the existence of three versions. The fact that he himself corrected and added rather many entries, as well as explanations and quotations, to his revised *DIEP* (1891) shows that the original *DIEP* (1888), which was “specially designed for the use of Japanese students”, was in a way deficient.

English-Japanese dictionaries in their early days referred a lot to English-English dictionaries, which was inevitable at that time. As for phrases, *DIEP* (1888) could have been the primary source amongst Japanese compilers. Some of the “mistakes” caused by Dixon were corrected by later compilers. An entry “to make a mountain of a molehill” mentioned in *DIEP* and used by a couple of dictionaries<sup>7)</sup> was corrected in the other dictionaries to “make a mountain out of a molehill”. However, as for proverbs, it seems that dictionaries that came later did more or less copy previous descriptions, including those from *DIEP*, without further research. Since proverbs are not fixed all the time but organic, their descriptions in dictionaries should not just stay there but should be checked and revised accordingly.

## NOTES

1) Started from ones published in 1915, *Inouye's English-Japanese Dictionary* and *Saito's Idiomatic English-Japanese Dictionary*.

2) <http://ecclegen.com/> (20. Dec. 2015.)

3) [http://antiques.gift/english-idioms\\_9705754.html](http://antiques.gift/english-idioms_9705754.html) (20. Dec. 2015.), and <http://www.worldcat.org/title/english-idioms/oclc/714029087?referer=di&ht=edition> (20. Dec. 2015.)

4) Such as *Saito's Idiomatic English-Japanese Dictionary* (1915), *Kenkyusha's New*

*English-Japanese Dictionary on bilingual principles* (1927), *Shogakukan Random House English-Japanese Dictionary* (1973), *Kenkyusha's English-Japanese Dictionary for the General Reader* (1984), *Taishukan's Unabridged Genius English-Japanese Dictionary* (2001), *Grand Concise English-Japanese Dictionary* (2001), and *Kenkyusha's New English-Japanese Dictionary 6th edition* (2002).

5) The following reference books are available on the Internet now. 20. Dec. 2015. Cassell's *Encyclopaedic Dictionary*, *A Supplementary English Glossary*, Wright's *Provincial Dictionary*, Dr. Samuel Johnson's *English Dictionary*, and *Slang Dictionary*.

6) Such as *Kenkyusha's New English-Japanese Dictionary on bilingual principles* (1927), *Iwanami's Comprehensive English-Japanese Dictionary* (1970), *Shogakukan Random House English-Japanese Dictionary* (1973), *Kenkyusha's English-Japanese Dictionary for the General Reader* (1984), *Taishukan's Unabridged Genius English-Japanese Dictionary* (2001), and *Kenkyusha's New English-Japanese Dictionary 6th edition* (2002).

7) They were *Saito's Idiomatic English-Japanese Dictionary* (1915) and *Kenkyusha's New English-Japanese Dictionary on bilingual principles* (1927).

## DICTIONARIES

Brewer, E. Cobham. *Dictionary of Phrase and Fable*. Philadelphia: Henry Altemus Company, 1898. Web. 20. Dec. 2015.

Dixon, James Main. *Dictionary of English Idiomatic Phrases Specially Designed for the Use of Japanese Students*. Tokyo: Kyoyekishosha, 1888. Print.

—. *Dictionary of English Idiomatic Phrases*. London: T Nelson and Sons, 1891. Web. 20. Dec. 2015.

—. *English Idioms*. London: Thomas Nelson and Sons, n.d. Print.

Eigo Kyoju Kenkyu Kai. *A Thesaurus of English Phrases with Japanese Equivalents (Eiwa Sokai Jukugo Jiten)*. Tokyo: Y. Kobunkan, 1905. Print.

Fowler H. W. and Fowler F. G. *The Concise Oxford Dictionary of Current English*. Oxford: Clarendon Press, 1911. Print.

Inoue, Jukichi. *Inouye's English-Japanese Dictionary (Inoue Eiwa Dai-jiten)*. Tokyo: Shiseido Shoten, 1915. Print.

Kanda, Naibu and Nannichi, Tsunetaro. *A Dictionary of English Phrases with English and Japanese Explanations (Eiwa Sokai Jyukugo Dai-jiten)*. Tokyo: Yuhodo, 1909. Print.

Konishi, Tomoshichi, and Minamide, Kosei, eds. *Taishukan's Unabridged Genius English-Japanese Dictionary (Jiiniasu Eiwa Dai-jiten)*. Tokyo: Taishukan Shoten, 2001. Print.

Kwong Ki Chiu. *Dictionary of English Phrases with Illustrative Sentences*. New York: A. S. Barnes & Co., 1881. Print.

—. *Dictionary of English Phrases with Illustrative Sentences*. Trans. and Ed. Masuda, Tonoske. Tokyo: Eijishinshisha, 1899. Print.

—. *Dictionary of English Phrases with Illustrative Sentences*. Tokyo: Kokumin Eigakukai, 1901. Print.

Manser, Martin H. *The Facts On File Dictionary of Proverbs*. 2nd ed. New York: Checkmark Books, 2007. Print.

- Matsuda, Tokuchiro, ed. *Kenkyusha's English-Japanese Dictionary for the General Reader (Rūdaazu Eiwa Jiten)*. Tokyo: Kenkyusha, 1984. Print.
- Nakajima, Fumio, ed. *Iwanami's Comprehensive English-Japanese Dictionary (Iwanami Eiwa Dai-jiten)*. Tokyo: Iwanami Shoten, 1970. Print.
- Okakura, Yoshisaburo, ed. *Kenkyusha's New English-Japanese Dictionary on bilingual principles (Shin Eiwa Dai-jiten)*. Tokyo: Kenkyusha, 1927. Print.
- Saito, Hidesaburo. *Saito's Idiomatic English-Japanese Dictionary (Jukugo Hon'i Eiwa Chu-jiten)*. Tokyo: Nichieisha, 1915. Print.
- Sanseido, ed. *Grand Concise English-Japanese Dictionary (Gurando Konsaisu Eiwa Dai-jiten)*. Tokyo: Sanseido, 2001. Print.
- Shogakukan, ed. *Shogakukan Random House English-Japanese Dictionary (Shogakukan Randamu Hausu Eiwa Dai-jiten)*. Tokyo: Shogakukan, 1973. Print.
- Simpson, J.A. and Weiner, E. S. C. *The Oxford English Dictionary*. 2nd ed. Oxford: Clarendon Press, 1989. Print.
- Speake, Jennifer, ed. *Oxford Dictionary of Proverbs*. 5th ed. Oxford: Oxford University Press, 2008. Print.
- Takebayashi, Shigeru, ed. *Kenkyusha's New English-Japanese Dictionary (Shin Eiwa Dai-jiten)*. 6th. ed. Tokyo: Kenkyusha, 2002. Print.

## REFERENCES

- Deki, Shigekuni and Takanashi Kenichi. "Dictionary of Idiomatic English Phrases, Specially designed [sic.] for the Use of Japanese Students." *Eigo Kyoikushi Shiryo [Materials of English Education History]*. Eds. Omura, Kiyoshi, Takanashi Kenkichi and Deki Shigekuni. Vol. 5. Tokyo: Tokyo Horei Publishing, 1980. Print.
- Dixon, James Main. "Biography." *Cyugai Eiji Shimibun [Cyugai English-language newspaper]*. Vol. 5. 1895. Print.
- Dyer, Henry. *Dai Nippon, the Britain of the East*. London: Blackie & Son, 1904. Web. 20. Dec. 2015.
- Ichikawa, Sanki. "Dixon Kyoju wo Shinobite [Commemorating Professor Dixon]." *Eigo-Seinen*. Vol. LXX, No. 5. (1933): 15. Print.
- Kojima, Yoshio. *Eigo Jisho no Hensen, Ei Bei Nihon wo Awase Mite [Transition of English Dictionaries, Looking at British, American and Japanese]*. Tokyo: Kenkyusha, 1999. Print.
- Omura, Kiyoshi. "James Main Dixon." *Eigo Kyoikushi Shiryo [Materials of English Education History]*. Eds. Omura, Kiyoshi, Takanashi Kenkichi and Deki Shigekuni. Vol. 5. Tokyo: Tokyo Horei Publishing, 1980. Print.
- Suzuki, Masako. "A Study of Proverbs in English-Japanese Dictionaries Published in the Last One Hundred Years," MA Thesis. Toyo University, 2015.
- Takenaka, Tatsunori. "On J. M. Dixon's *Dictionary of Idiomatic English Phrases*," *Eigakushi Kenkyu*. Vol. 40. (2007): 23-36. Print.
- Toyoda, Minoru. *Nihon Eigakushi no Kenkyu [Research on History of Japanese English-Study]*. Tokyo: Iwanami Shoten, 1933. Print.

# Twenty-Five Years of History and Prospects of Handheld Unabridged Electronic Dictionaries in Japan — Galapagosization's Gains and Losses<sup>1)</sup>

KENJI SEKIYAMA

## 1. Introduction

One thing that surprises native English speakers when they come to Japan is the use of handheld unabridged electronic dictionaries (HUEDs) by not only English teachers and researchers, but also the junior-high and high school students. Sekiyama (2007) classifies electronic dictionaries into three types — HUEDs, dictionary software, and web-based dictionaries — but it is safe to say that HUEDs are the type most familiar to Japanese people. Outside of Japan, in contrast, web-based dictionaries and dictionary software are the most widespread, and HUEDs are uncommon except among a handful of crossword puzzle enthusiasts. In a country where personal computers and smartphones are widely used, why do Japanese people use HUEDs, which cost hundreds of dollars, instead of cheaper web-based dictionaries and dictionary software?

This paper reviews 25 years of changes in HUEDs, from their inception to the present, and considers the chronology followed by Japan's uniquely Galapagosized<sup>1)</sup> HUEDs. First, I will describe the predecessors of HUEDs in Section 2: the electronic speller developed in the U.S., and the handheld electronic wordbooks (HEWBs) released in Japan. In doing so, I will clarify the influences on how English dictionaries were used in Japan versus the U.S. Next, in Section 3, I will analyze the evolution of HUEDs in Japan into four stages, and discuss how their specifications changed at each stage. Finally, in Section 4, I will discuss the influence of the spread of smart devices like smart-

phones and tablets has had on HUEDs.

I will restrict the term HUED in this paper to refer to only “full-content” electronic dictionaries, which are equipped with the complete textual information of paper dictionaries. To distinguish them clearly from HUEDs, I will designate HEWBs as those devices that list only English/Japanese equivalents and which are *not* based on the contents of paper dictionaries. Furthermore, this paper considers dictionaries built into non-dictionary-specific devices, such as electronic book players and electronic organizers, as outside of the scope of analysis.

## **2. The Prehistory of HUEDs: Differences between Japan and the U.S.**

The prototypes of modern HUEDs were the electronic spellers developed in the U.S. in the late 1980s and the HEWBs released in Japan in the late 1970s to 1980s. Strictly speaking, these were not dictionaries, but as we are considering how HUEDs are positioned differently in Japan versus the U.S., I believe it is valid to discuss them in the context of their origins.

In this section, I briefly describe the functions of each type of device, and discuss how it would become the foundation of electronic dictionaries, which were different in Japan and the U.S.

### **2.1. The U.S.: Electronic Spellers**

Because English uses phonogram such that spelling and pronunciation lack a one-to-one correspondence, it is extremely difficult to look up the meaning of a word for which the exact spelling is unknown in a paper dictionary. Thus, learning to spell accurately is a necessary step that native English speakers must take before using a dictionary.

This background led to electronic spellers being developed earlier in the U.S., with the first-of-its-kind “Spelling Ace” (SA-88) released by Franklin Electronic Publishers in 1986. The function of the SA-88 was to compare the spelling of an input word against a built-in word list: if the spelling was incorrect, the device would infer and display correctly spelled word suggestions. Because its purpose was to confirm

and revise the spelling of words, information considered essential for dictionaries (definitions, synonyms, examples, etc.) was omitted, and it was instead equipped with a list of approximately 83,000 English words, a comparable scope to the paperback compact English dictionaries used daily by native English speakers.

The SA-88 was equipped with algorithms for inferring spelling not only based on similarity in spelling, but also based on phonological rules. Thus, correctly spelled word suggestions would be displayed to users if they input words according to their pronunciation. This includes even words they did not know the spelling of at all, or words of which they had only a vague recollection. At the time the SA-88 was released, most native English speakers were using traditional mechanical typewriters. As these lacked built-in spell-check functions of the kind seen in more-recent electronic typewriters and English word processing computer software, the SA-88, with its ability to look up the spelling of words simply, became a bestseller, selling millions of units.

In addition to its spell-check function, the SA-88 also came equipped with a wild-card search. If a user was unsure of some letters comprising a word, they could replace the unknown letters with "?", and the correctly spelled word suggestions would be displayed<sup>1</sup>). In the U.S., with its many crossword puzzle enthusiasts, many used the SA-88 when solving or creating difficult crosswords. Instead of including definitions and usage examples to provide functions that are characteristic of dictionaries, which would consume much memory, makers had prioritized in improving the precision of the spell-check and wild-card search functions by increasing the size of the compiled word list as much as possible.

The Word Master (WM-1000), the successor model to the SA-88, was released in 1987, equipped with a synonym search in addition to the spell-check and wild-card search. After several subsequent HEWBs, the SCD-770 — the first HUED in the U.S. — was finally released in 1996<sup>2</sup>).

The need is great in the U.S. for spell-check and wild-card search

functions. What became mainstream then were electronic spellers released with essentially the same specifications as the SA-88, a trend extending even to the present day. We can consider the SCD-770 and its successor models to be high-end HUED models, in which the dictionary search functions intended for specific professionals have been added to the functions of the electronic spellers that have continued since the SA-88. The resulting long intervals between model changes and long-term continuations of individual models on the market are a point that greatly differs from Japanese trends.

## 2.2. Japan: Handheld Electronic Wordbooks (HEWBs)

Japanese uses *kana* alphabets, in which characters and sounds have an almost one-to-one correspondence. Therefore, a person can search the meaning of even an unknown word in a Japanese dictionary, in which words are listed in Japanese syllabary (*gojūon*) order, if they hear its pronunciation. In contrast to the relationship between native English speakers and English words, Japanese people do not feel that spelling Japanese words correctly is difficult, and so spellers of the kind seen in the U.S. are not considered necessary. In addition, thanks to the existence of *kanji* ideographs, simply being an adult native Japanese speaker is sufficient to be able to infer the meaning of unknown words simply and easily. As a result, dictionaries of the English language, which all Japanese learn as part of compulsory education (i.e., English-Japanese and Japanese-English dictionaries) have historically drawn greater interest than pure Japanese-language dictionaries.

The *Den'yaku-ki* (IQ-3000), released by Sharp in 1979, was the world's first HEWB: the product can be considered a prototype HUED in Japan. Approximately 2,800 English entry words, predominantly basic vocabulary, and about 5,000 Japanese equivalents were compiled in the device. Japanese translations were displayed in *katakana* because LCD screens that could display *kanji* had not yet been in development at the time.

In 1987, the *Denjirin* (PD-1) was released by Sanyo Electric, containing approximately 35,000 words, and displaying Japanese equiva-

lents in *kanji*. Almost the same number of words was compiled in the device as in English-Japanese print dictionaries intended for high school students: a user could use the device instead of a paper dictionary if they wanted to know merely the Japanese translation of a common word. However, neither the IQ-3000 nor the PD-1 contained usage examples, grammar notes, or other information besides translation equivalents: as opposed to HUEDs, these devices amounted to no more than large-scale HEWBs.

In 1991, the TR-700 was released by Seiko Instruments. This model was the first proper HUED, containing all of the textual information from the print editions of the English-Japanese & Japanese-English dictionary, "*Kenkyusha's New Collegiate English-Japanese Dictionary 5th Edition*," "*Kenkyusha's New Collegiate Japanese-English Dictionary 3rd Edition*," and "*Roget's II The New Thesaurus*," as well as examples and other information. HUEDs in this initial period were extremely expensive<sup>3</sup>, and so HEWBs containing approximately the same number of words as paper dictionaries were released in tandem, with accompanying lower price lines.

Essentially, the successor models to HEWBs, the Japanese HUEDs have an over-20-year history since the IQ-3000, which has been marked by successive improvements that continue to the present day. This sets them apart from their American counterparts. Cheaper than HUEDs, HEWBs remained popular for a time even after the TR-700 were in the consumer market. However, HUED prices began to fall, and as the difference in cost between them and HEWBs narrowed, gradually an increasing number of consumers began to carry around HUEDs instead of paper dictionaries or HEWBs. As described in Section 3.2, the unit shipments of HUEDs have exceeded those of HEWBs ever since 2002. Accompanying this trend, new products have been released every year to date with improved functions, such as having more dictionaries installed or allowing cross-searching between all compiled dictionaries on the device. These developments have created an evolutionary history of HUEDs that is unique to Japan.

### 3. History and Classification of HUEDs in Japan

In this section, I describe how Japanese HUEDs have evolved to date, broadly classifying their progress into four stages. I will limit my discussion to those important functions added or modified at each stage, with accompanying examples of representative HUED model names and makers.

#### 3.1. Stage I: 1990s

I classify the HUEDs released in the 1990s, starting with the introduction of the TR-700 in 1991, as Stage I models. These HUEDs include the TR-9700 (Seiko Instruments, 1997), XD-1500 (Casio, 1999), PW-5000 (Sharp, 1997), and SR-8000 (Seiko Instruments, 1999) among others<sup>1</sup>. Newly implemented features of HUEDs at this stage included jump search and phrase search, which were not present in the TR-700.

The jump search function, as described in detail by Yamada (2014), allowed a user to highlight an English word in a given dictionary in order to search for it in a different dictionary. For example, by selecting an English equivalent appearing in a Japanese-English dictionary and jumping to an English-Japanese dictionary, the user could view detailed usage notes and examples for that word. The TR-700 lacked a jump function, and so its users needed to re-enter the word and search once more. However, with HUEDs equipped with the jump function described above, users could move freely between installed dictionaries, giving the impression of “dictionary surfing” from the originally searched dictionary without needing to re-input the word. This is arguably an indispensable function for Japan, where HUEDs compete on the basis of the number of installed dictionaries.

Phrase search is a function for searching phrases compiled in a dictionary using a word or words. For example, if one wanted to look up the phrase “take advantage of”, deciding which word a phrase would be listed under would be a challenge: “take”, “advantage”, or “of”? This would be especially true for a beginning student with a paper dictionary. By using phrase search, the user could search for the

phrase in question simply by inputting some (or all) of the words constituting the phrase: e.g., “take” and/or “advantage” and/or “of”. In Japanese university entrance examinations, applicants are often asked about the meaning of phrases in addition to knowledge about words. Accordingly, phrase search is a heavily used function among not only the English teachers, but the high school and university students as well.

### **3.2. Stage II: Early 2000s**

Stage II HUEDs are primarily those models released in the early 2000s. The HUEDs at this stage include the SR-9500 (Seiko Instruments, 2001), XD-R8100 (Casio, 2002), and PW-6800 (Sharp, 2002) among others. HUEDs experienced increased sales in this period, and in early 2002, had exceeded HEWB sales in terms of unit shipments. With improved hardware performance and high-resolution screens, users were able to access dictionaries at high speeds. Accordingly, in Stage II HUEDs, along with the increase in the number of dictionaries loaded into the devices, makers implemented many other functions not present in the previous HUEDs. Features of these novel functions included quick search and example search.

With the quick search function, the screen displaying translation equivalents is predictively updated each time a user inputs a letter of the word they want to search; thus, allowing them to search for a word without entering all the letters. Similarly to paper dictionaries, the user could see a word’s meaning if they know its first few characters, and the effort spent on keystrokes was economized considerably.

The example search function allowed a user to search for and list usage examples containing an input word from all dictionaries in the device. The user could use the examples from all dictionaries as a kind of corpus, which became a fundamentally priceless feature when searching for English sentences to serve as reference for their own English compositions.

Functions that reproduced features of paper dictionaries (typified by quick search) were well-balanced with functions absent from them (such

as example search) in Stage II HUEDs, and their operability has greatly improved. The Stage II models with the built-in features of paper dictionaries, and other functions unique to these models have accelerated the transition from paper dictionaries to HUEDs.

### 3.3. Stage III: Mid 2000s

Stage III includes models released from 2003 to 2006. Examples include the SR-E10000 (Seiko Instruments, 2005), XD-H9200 (Casio, 2004), and PW-9800 (Sharp, 2003).

HUED unit shipments skyrocketed, and makers competed with each other to see who could load the most dictionaries onto their device. Only three dictionaries were loaded into the first-ever HUED model, the TR-700, but models with over 100 dictionaries were introduced in 2006. The multiple-dictionary search, the multiple-dictionary example search, and the Japanese jump search were functions newly built into Stage III HUEDs so that users could swiftly search through the large volumes of loaded dictionaries.

Using the multiple-dictionary search function, a user searches through all the dictionaries loaded into the device at once to return a list of search results by entering their target word. The sequence for multiple-dictionary search is to first enter the word, then select the dictionary with the desired contents: this contrasts with searches in prior HUEDs, where the user needed to select the dictionary they wanted to use before entering the word to search. This function permits users to get results more quickly by searching cross-sectionally through the dictionaries in the device irrespective how high their number is. Because of this, nearly all HUEDs since have come with this function built in.

The multiple-dictionary example search function is an expanded version of the example search mentioned in Section 3.2: one can search for usage examples in which the input words are searched through all the English dictionaries loaded into the device. Pertinent example sentences can be found across the corpora of the dictionaries in the device, a function that is distinct from the previous singular

dictionary example search. As a result, some models could arrange examples by dictionary, or align sentences with the target word in the center of the display.

The Japanese jump function was an expanded version of the jump function mentioned in Section 3.1: one could now jump to other dictionaries by selecting not only English words, but Japanese words as well. Different from English with its words separated by spaces, Japanese lacks a clear separation of words. As a result, the target words to jump both to and from must be segmented before jumping, a CPU-intensive task. The dramatic improvements in processing speed in Stage III HUEDs that allowed users to now search dozens of dictionaries at once also made it possible for them to jump to and from Japanese words, a challenge for prior models.

The implementation of the Japanese jump function allowed users to jump bidirectionally, from English to Japanese and vice versa, meaning they could now freely go back and forth between almost all the dictionaries loaded into the device. People could now access and compare dozens of paper dictionaries, a feat virtually impossible in reality. The Japanese HUED had become a unique search tool, sharply distinguishing itself from not only paper dictionaries and the CD-ROM dictionary software & web-based dictionaries that contained them verbatim, but from the HUEDs and HEWBs of other countries as well.

#### **3.4. Stage IV: Late 2000s-Present**

Stage IV includes HUEDs from 2007 to today. Models of this stage are equipped with color LCD displays and touch panels, and include the XD-A10000 (Casio) and PW-TC920 (Sharp)<sup>2)</sup>.

Having experienced long and continued growth, HUED unit shipments peaked in 2007, with approximately 2.8 million units shipped (JBMIA, 2015). At the same time, with the release of the iPhone in 2007 and the iPad in 2010, HUEDs became exposed to competition from smart devices like smartphones and tablets. It should be obvious that traditional HUEDs, where users searched using a keyboard and monochrome display, could not possibly compete with smartphones,

with their high-resolution color LCD displays and screens that users could intuitively manipulate by touch.

Until this point, the stimulus for functional improvements and enhanced operability had been through friendly competition amongst makers, within the scope of HUEDs, leading to the creation of HUEDs unique to the Japanese market. From Stage IV onwards though, the same makers were forced to be conscious of smartphone progress. A touch-panel-equipped HUED was first introduced in 2007, and from 2010 onwards, almost all models had adopted color LCD displays. HUEDs were also introduced where the user could add non-dictionary software, models that would be more aptly called “smartphones with keyboards” than electronic dictionaries.

The number of dictionaries installed also increased with each model change; however, in 2012 and with the regular inclusion of nearly 200 dictionaries in a device, makers explored strategies to develop HUEDs as language learning tools rather than trying to increase dictionary count. Companies included large quantities of audio and video data: for example, one year of audio recordings of English conversation program from NHK Radio, or videos from the English learning animated program “Little Charo”. With steps such as these, each company ingeniously reinvented their HUEDs, not as imitations of smart devices, but as dictionary-centric learning devices specialized for language learning.

#### **4. Current Status & Future Challenges for HUEDs**

Nearly ten years have elapsed since the introduction of the first Stage IV HUEDs. In the midst of smart devices’ unrelenting spread, unit shipments of HUEDs in 2014 were about 1.42 million units, a mere half or so of the maximum in 2007. Users of dictionary applications on smart devices and web-based dictionaries have increased with each passing year, especially among university students and working adults. Seiko Instruments, which had primarily sold models intended for working adults ever since the release of the very first HUED model, ceased HUED sales in 2015.

HUEDs aimed at students, on the other hand, are used even today by many junior-high and high school students, since smartphone use during classes is prohibited at nearly all junior-high and high schools. As a result, recent student-model HUEDs that come installed with English certification exam (e.g., TOEIC, TOEFL) preparation materials, or listening materials for studying English for everyday use have increased in number, more so than those that come with increased numbers of dictionaries. The Galapagosization of Japanese HUEDs is clearly perceivable in the heavy compilation of study materials besides dictionaries, examples of a trend that are nearly absent outside of Japan.

Smart devices will continue to be adopted at levels beyond its current levels hereafter if e-textbooks are adopted in classroom educational settings, it will likely to become commonplace for students to operate tablets installed with dictionary applications during lessons. Modern HUEDs cost more than tablets and yet lack the versatility of the latter. However, looking at them from a different perspective, these HUEDs, with their unique Japan-specific sustained evolutionary development influenced by user demands, boast many strong points. The ability to access detailed information by jumping across hundreds of dictionaries, the ability to use them immediately after powering on, long battery life, and the lack of distraction due to the absence of internet connectivity are among the advantages of HUEDs.

In this paper, I primarily aimed to provide an overview of the 25 years of HUEDs—including their predecessors, the HEWBs—in Japan to summarize the current state of HUEDs to researchers outside Japan who are not familiar with them. Each dictionary medium must continue to coexist to move forward, while users take advantage of the properties of each: one such direction is to improve dictionary applications and web-based dictionaries for smart devices with reference to the functions and operability of Japanese HUEDs.

## NOTES

## Title

- 1) This paper is an expanded and completely updated version of Sekiyama (Website).

## Section 1

- 1) Japanese HUEDs have followed a different course of evolution from other countries because their product development has proceeded according to domestic needs.

## Section 2

- 1) For example, inputting “?pel?in?” would result in the suggestion “spelling” being displayed.
- 2) This HUED contained the contents of *Merriam Webster’s Collegiate Dictionary 10th Edition*.
- 3) The TR-700 cost 48,000 yen.

## Section 3

- 1) The SR-8000 was even equipped with example search and quick search, the same functions that would characterize Stage II models.
- 2) In lieu of color LCD displays and touch panels, Seiko Instruments released the first models with user dictionary creation and language drill creation in 2008.

## REFERENCES

- Japan Business Machine and Information System Industries Association (JBMI). 2015. “Denshi Jisho Shijo no Doko Chosa Hokoku III” [Market Research Report Vol.3]. Tokyo JBMI.
- Sekiyama, Kenji. “Denshi Jisho no Rekishi to Korekara” [History and Prospects of Electronic Dictionaries in Japan]. 13 Feb. 2016 <<http://www.sekky.org/edichist.html>>.
- Sekiyama, Kenji. 2007. “Jisho kara Hajimeru Eigo Gakushu” [Studying English through Dictionaries]. Tokyo: Shogakukan.
- Yamada, Shigeru. 2014. “Dictionary Use in Urban Society: Web-based and Hand-held Electronic Dictionaries.” Paper Presented at *Language Phenomena in Urban Society: Konferensi Linguistik*.

# How Do Mobile Technologies Affect Learning Environments?: Smartphone Dictionary Apps vs. Pocket E-Dictionaries\*

TOSHIKO KOYAMA

## 1. Introduction

### 1.1. Dictionary Use and L2 Learning

It has been argued by many researchers whether foreign/second (hereafter L2) language learners could derive benefit from dictionary use or not. There has been a growing body of research that has had its focus over the last several decades. To give some examples, Lupescu and Day attempted to confirm the effectiveness of bilingual dictionary use in L2 learning. As a result, the dictionary group got a higher score on the vocabulary test than the no-dictionary group did. The study also indicated that a dictionary might be helpful to disambiguate word meanings when learners could not infer them completely from the context. They concluded that the use of a bilingual dictionary while reading could facilitate L2 learners' vocabulary learning, and that it seemed to help L2 learners who could not infer word meanings from the context. Knight's study revealed that students who used a dictionary not only learned more words but also attained higher reading comprehension scores than those who guessed from context, conversely, that low verbal ability students were at a disadvantage when they were told to guess from the context. She also reported that high verbal ability students referred to the dictionary, even though they had already correctly guessed the meaning. In summarizing these findings, Knight put emphasis on the effects of dictionary use on comprehension and vocabulary acquisition for L2 learners. Tono conducted a wide variety of studies to clarify the relationship between dictionary

use and L2 acquisition. He aimed to show how research into dictionary use could contribute to the improvement of dictionary design and the clarification of issues in language learning. Although Béjoint did not completely accept such an optimistic view, Laufer claimed that, "The conclusion that seems to have emerged is that people who use a dictionary almost always acquire more words than people who read without a dictionary."(849) Other studies likewise reported that dictionaries can offer learners the obvious possibilities of effective L2 learning.

With the development of digital technology, the types of available learners' dictionaries have become widely diversified since the end of the twentieth century. Lynda Mugglestone, in "Dictionaries: A Very Short Introduction," described how types of dictionaries have diversified from ancient times up to the present:

What is abundantly clear in terms of the ongoing history of dictionaries and dictionary-making is the way in which a form that began, as we have seen, on clay tablets over 3,000 years ago is triumphantly continuing to adapt and to evolve capitalizing on new environments (mobile phones, iPads, iPods), as well as on the capacity to interact with users (and for uses to interact with dictionaries) in ways which clearly extend what had earlier been possible. (132)

Today, a wide range of dictionaries not only on paper but also on the Web or digital devices are available for L2 learning. Aust *et al.* argued that an online electronic dictionary (hyper-reference) can offer many advantages to learners because it provides immediate access to the target information, compared with paper dictionaries which require learners to tackle an arduous task. They found that learners consulted hyper-references much more frequently than paper dictionaries, however, no significant difference in comprehension was found between hyper-references and paper dictionaries. Laufer investigated incidental vocabulary acquisition under two reading conditions, and reported that the electronic text group using an electronic dictionary performed better.

## 1.2. Dictionaries with Mobile Technology

The advent of pocket E-dictionaries has changed the pedagogical learning environment. During the latter half of the 1990s, the number of L2 learners using this type of dictionary has expanded, and to everyone's surprise, pocket E-dictionaries have rapidly replaced the paper dictionary especially in East Asian countries. And they continue to be popular among Japanese high school and college students even now.

Koyama and Takeuchi, which was one of the first attempts to compare paper dictionaries and pocket E-dictionaries, reported that the number of look-ups for pocket E-dictionary users was not necessarily proportional to the retention of looked-up words, and claimed that the interface design of paper dictionaries might lead to higher word retention. They also found that some relations existed between the dictionary's interface design and the learners' impression of each dictionary. Shizuka claimed that the pocket E-dictionaries were more efficient. One of his findings was that pocket E-dictionaries were superior to paper dictionaries in accessing words and identifying their meanings quickly. Additionally, he insisted that L2 learners tended to look up words more frequently in using pocket E-dictionaries, as they were less reluctant to use them. His assertion is supported by Aust *et al.*

On the other hand, new gadgets such as smart phones and tablets have rapidly made their way into universal favor in recent years. According to the report made by Pew Research Center in 2015, smartphones increasingly play an important role in helping Americans access, share, and create information and communicate with others. It stated that nearly two-thirds of Americans now own a smartphone. It is said that mobile devices as teaching tools are actually becoming more common part of the American classrooms, from preschool through college level. That the situation in Japan is the same goes without saying. In fact, the IICP Annual Report for 2014 announced that 62.3% of Japanese aged 13–69 use a smartphone. It also revealed that 94.1% of Japanese between the age of 20 and 29, and 68.6% of Japanese teenagers use a smartphone respectively.

Recent learners in their teens and twenties can be called “Digital Natives” who have spent their entire lives surrounded by and using all sorts of different digital tools. Prensky (2001: 1), an advocate of this notion, mentioned that “Today’s students have not just changed *incrementally* from those of the past, nor simply changed their slang, clothes, body adornments, or styles, as has happened between generations previously. A really big *discontinuity* has taken place.”

As has Mugglestone pointed out, the situation quickly changing around dictionaries can not be neglected. Here let us direct our attention to the argument concerning the smartphone as a dictionary for L2 learning. What will happen when our digital natives have a smartphone dictionary whose contents are the same as a pocket E-dictionary? Will they migrate to the smartphone? Will they use it frequently? How effective would it be as a tool for language pedagogy? These are issues that require examination from the pedagogical aspects of dictionary use and L2 learning. The paucity of reports on these issues has prompted this investigation.

## 2. Research Objectives

The primary objective of the study was to explore the potential to enhance language learning through the use of mobile devices. To this end, the present study was carried out examining the following four hypotheses:

*Hypothesis 1: The number of lookups in using pocket E-dictionary will be more than that of smartphone dictionary apps.*

*Hypothesis 2: The time to complete the assigned task in using smartphone dictionary apps will be shorter than that of pocket E-dictionaries.*

*Hypothesis 3: The retention of the lookups in using smartphone dictionary apps will be the same as that of pocket E-dictionaries.*

*Hypothesis 4: Participants prefer smartphone dictionary apps to pocket E-dictionaries.*

As might be suspected, the participants were considered to be heavy users of smartphones. It could be assumed that, therefore, they might manage dictionary apps on their phones skillfully as well as, or better than their pocket E-dictionaries. Additionally, as Hulstijn advocated “*the depth of processing*” hypothesis, an elaborate process for acquiring new lexical information leads to higher retention. It appears that neither mobile device under study requires participants to go through an elaborate look-up process.

On the other, there exist marked differences in data display and physical keyboard input functions of smartphone dictionaries and pocket E-dictionaries. In Koyama and Takeuchi, owing to its interface design, learners tended to consider that pocket E-dictionaries did not provide sufficient information, as did printed ones, although both of them contained the same amount of information. Thus, the difference in its interface design of both dictionaries might have some influence on learners’ lookup behavior. To examine these issues empirically, the four hypotheses above were made.

### **3. Methodology**

#### **3.1. Participants**

Participants in the experiment were 15 undergraduate students in their 3rd and 4th years (10 females and 5 males) at several universities in the western part of Japan. Their majors ranged widely over English, Cultural Heritage Sciences, Engineering, Politics, Social Sciences, Education, and Veterinary Science. Given both the result of a 45-item cloze test ( $M=22.47$ ,  $SD=2.72$ ) conducted in advance and their scores obtained in TOEIC<sup>1</sup> or EIKEN<sup>2</sup>, they were considered to be at an intermediate level of English proficiency as Japanese college students.

Interview data revealed that they have been E-dictionary users at least since they were high school students. Also, all of them have owned smartphones which they used social media or texting with others for several years.

### 3.2. Dictionaries used

The smartphone dictionary apps and pocket E-dictionaries the participants already possessed were used in the present study. Both dictionaries included *Taishukan's Genius English-Japanese Dictionary (4th edition)* by which the participants were instructed to perform their assigned task in the experiment. Since they were unfamiliar with the smartphone dictionary apps at that time, all the participants were given sufficient time to practice with them beforehand. Although that application was a pay version, the participants were refunded the cost after the experiment.

### 3.3. Task assignments

Two types of tasks, ten vocabulary quizzes and three reading comprehension quizzes were used in the experiment (See one of the tasks in the Appendix). They were chosen from a written examination of the Pre-1 Grade STEP Test (The Society for Testing English Proficiency, Inc.) which was held in June and October 2006. These quizzes contained several words and phrases that were judged to be unfamiliar to the participants. The readability of each text was approximately the same level (See Table 1).

Table 1. Readability of Reading texts

Text	Flesch Reading Ease	Flesch-Kincaid Grade Level	Number of Words
A	47.9	12.7	322
B	46.1	11.0	319

### 3.4. Procedure

A triangulated approach was adopted to collect data by means of multiple instruments—tasks assigned with two conditions, questionnaires, and participants' feedback.

To compare the differences in both interface design and effects on learning, the procedure in Koyama and Takeuchi (2004), which investigated the differences in look-up behavior and learning effect between

printed dictionaries and pocket E-dictionaries, was mainly applied to the current study. To reduce possible risks of order and task effects, the study employed a counter-balanced design, thus, the participants were divided into two groups (See Table 2).

The experiment consisted of two sessions. The participants of each group performed two tasks in the first session: answering vocabulary quizzes and reading comprehension quizzes with dictionaries. Group 1 answered Text A with a smartphone dictionary, and then, did Text B with a pocket E-dictionary. In the case of Group 2, devices used were reversed. The participants of both groups filled out a 20 item-questionnaire afterwards.

In the second session, which was held about a week later, two different tasks were also assigned to both groups: a recognition test without advanced notice and a request for comments while reviewing the answers of the 20-item questionnaire and the tasks performed a week before. The recognition test was conducted to assess word retention from in the first session. The test was a list consisting of the words in both Texts A and B. Participants were requested to circle the words they thought they actually looked up in the both dictionaries in the

Table 2 Procedure of the Experiment

<i>Group 1 (N=9)</i>	<i>Group 2 (N=6)</i>
Cloze test	Cloze test
<b>&lt;1st session&gt;</b>	<b>&lt;1st session&gt;</b>
<ol style="list-style-type: none"> <li>1. Vocabulary Quiz and Reading comprehension task (Text A) with a <b>smartphone dictionary Apps</b></li> <li>2. Vocabulary Quiz and Reading comprehension task (Text B) with a <b>pocket E-dictionary</b></li> <li>3. Answering a 20-item questionnaire</li> </ol>	<ol style="list-style-type: none"> <li>1. Vocabulary Quiz and Reading comprehension task (Text A) with a <b>pocket E-dictionary</b></li> <li>1. Vocabulary Quiz and Reading comprehension task (Text B) with a <b>smartphone dictionary Apps</b></li> <li>1. Answering a 20-item questionnaire</li> </ol>
<b>One week later</b>	<b>One week later</b>
<b>&lt;2nd session&gt;</b>	<b>&lt;2nd session&gt;</b>
<ol style="list-style-type: none"> <li>1. Recognition Test</li> <li>2. Interview (making some comments on the task in the 1st session)</li> </ol>	<ol style="list-style-type: none"> <li>1. Recognition Test</li> <li>2. Interview (making some comments on the task in the 1st session)</li> </ol>

first session.

The entire session, including instructions, lasted close to three hours. The participants were tested individually, so that they worked at their own pace.

## 4. Results

### 4.1. Time needed and quiz scores obtained

Table 3 compares the time and the number of looked up words in the first session. The result of the mean scores and the *SDs* for vocabulary and reading comprehension quizzes in the first session was shown in Table 4. One point was given to each correct answer, and with full marks being ten and three respectively.

Given the small number of the participants in the experiment, the non-parametric *Wilcoxon signed-rank test* was adopted for statistical analysis (Siegel and Castellan, Jr.). The values revealed no significant differences in the time they required and the number of the words looked up in each condition. In addition, no significant differences were found in both vocabulary and reading comprehension quiz scores between smartphone apps and pocket E-dictionaries conditions at the .05 level.

Table 3. Results of Look-up Behavior

	Smartphone Apps		Pocket E-dictionary	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Time to perform tasks (min.)	32.73	8.22	30.87	8.61
The number of lookups	28.47	11.78	29.53	13.47

*All values are n.s.*

Table 4. Results of the Quiz Scores

Quizzes	Smartphone Apps		Pocket E-dictionary	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Vocabulary	7.67	1.72	8.07	1.53
Reading Comprehension	1.93	.88	1.87	.74

*All values are n.s.*

## 4.2. Retention

The result of the recognition test scores of each participant in the second session was shown in Table 5. The test was administered to measure retention after one week in each dictionary condition. In grading the recognition task, one point was given if participants circled the words they thought they had actually looked up in a dictionary in the first session. These were calculated by dividing the number of words they consulted in the first session by the number of words recognized in the second session. Each score in Table 5 was thus shown in percentages.

Comparing the mean values in Table 5, no great differences were found in either condition. This was statistically supported by the result of *Wilcoxon signed-rank test*.

Table 5. Descriptive Statistics: Retention of Looked ups

Participants #	Group	Smartphone Apps	Pocket E-dictionary
1	1	25.0	24.0
2	1	69.8	76.2
3	1	11.1	0.0
4	1	5.0	14.9
5	1	13.3	15.0
6	1	55.6	47.4
7	1	10.3	18.8
8	1	29.4	30.0
9	1	50.0	56.3
10	2	34.6	19.0
11	2	13.6	23.3
12	2	73.5	69.4
13	2	26.8	25.0
14	2	20.7	20.0
15	2	61.0	73.6
<i>M</i>		33.3	34.2

(Unit: %)

*All values are n.s.*

### 4.3. Participants' feedback on the dictionaries used

In order to assess the differences in the students' attitudes, a 20-item questionnaire was administered immediately after answering the vocabulary and reading comprehension quizzes with dictionaries. A five-point Lickert scale was used, with 5 indicating complete agreement with the statement.

Table 6 displays some excerpts from the questionnaire that showed a considerable difference between the two dictionaries. Item (19) "*I have to get the knack for using this dictionary.*" has its polarity reversed, a favorable attitude being rated as "1".

The participants evaluated smartphone apps highly only on item (9) "*This dictionary was handy.*" On the other hand, they rated smartphone apps low on item (12) "*I feel I can use this dictionary for a long time.*" It seemed that their opinions of each item were inconsistent.

On the whole, they had a preference to pocket E-dictionaries on other items, on which large differences between the two dictionaries were observed in the questionnaire. It should be noted that although

Table 6. Responses to the Questionnaire (Excerpts)

Item #	Questionnaire Items	Smartphone Apps	Pocket E-dictionary
1	This dictionary provided me with much information at first sight.	2.9	4.2
9	This dictionary is handy.	4.6	3.5
11	This dictionary was convenient for comparing the meanings of more than two words.	2.7	3.7
12	I feel I can use this dictionary for a long time.	2.3	4.1
14	I would like to use this dictionary again when participating in this sort of experiments.	3.0	4.1
17	This dictionary is appropriate for beginners in learning English at a primary or lower secondary school.	2.2	3.0
19	I had to get the knack for using this dictionary.	4.1	2.6

The questions were originally given in Japanese.

the participants were seemed to manage their smartphone dictionary apps skillfully, their response to item (19) “*I had to get the knack for using this dictionary.*” was negative. And furthermore, their assessments of item (17) “*This dictionary is appropriate for beginners in learning English at a primary or lower secondary school.*” were relatively low on both dictionaries.

Table 7. Participants' Feedback on Item (17)

Participant #	Feedback
1, 11	School kids should use a paper dictionary at the beginning. Because it displays a lot of information at first sight, and they can become familiar with dictionary contents.
3	Dictionaries that learners first encounter are very important. They can follow information about target words in dictionaries, if it is a printed version.
4	I suppose that school kids easily consult digital version of dictionaries without any trouble.
5	Either will do, but I believe that language information should be put in order by oneself using stickers on the page. So paper version of dictionaries will be the best.
6	Paper dictionaries can be customized to fit one's need, but pocket E-dictionaries are equipped with a phonetic sound function, which is useful for English study.
7	It is inappropriate for elementary school pupils to use smartphone dictionary apps as an educational device. Pocket E-dictionaries will be OK if teachers teach them how to use them.
9, 14	I think pupils should start using paper version of dictionaries. They had better have a hard time looking up words with them at the beginning, then, they can notice how convenient pocket E-dictionaries are.
10	I think that it is valuable for learners of English to look up words in paper dictionaries. So the best is paper version, but a pocket E-dictionary is also acceptable. It makes me turn on my “study” switch.
12	I think that a function of telecommunications of smartphones may interfere with their studying.
13	It depends on how teachers in elementary schools give their pupils guidance when using dictionaries.
15	I think that smartphones are not for school kids. They cannot concentrate on studying when looking up words, because other apps such as <i>LINE</i> or <i>YouTube</i> are available on it at the same time.

The comments were originally given in Japanese.

After recognition test in the second session, participants commented on each dictionary while reviewing the tasks they performed a week before. Their comments on items (17) “*This dictionary is appropriate for beginners in learning English at a primary or lower secondary school,*” which has low evaluation in either dictionary, were shown in Table 7. Examining their feedback in the table, it is obvious that most of the participants regarded smartphone dictionaries as inappropriate for beginners of L2 learning, and some of them recommended them to use paper version of dictionaries.

The questionnaire item, on which a decided difference was observed between two dictionaries, was (19) “*I had to get the knack for using this dictionary.*” Table 8 displays some excerpts from the participants’ comments, which indicate that they were not satisfied with data input into smartphone as compared to the pocket E-dictionaries. They observed that making efficient use of smartphone dictionaries required greater skill.

Table 8. Participants’ Feedback on Item (19)

Participant #	Feedback
5	Smartphones are not equipped with a physical keyboard.
3, 4	Smartphones are not equipped with necessary function keys like usage examples or idioms.
7, 12, 14	I think it takes some time to get used to smartphone dictionary apps, but a pocket E-dictionary was easy for me to use from the beginning.
9	Letters displayed on the smartphone are really small. Also, I had to scroll text one line at a time to find necessary information.
10	I can “type” target words with a keyboard of a pocket E-dictionary like a computer. I think a recognition rate is a little different in both dictionaries.
13	I think that we soon get the knack of using new digital devices.
15	I like a sensation of the touch of my pocket E-dictionary’s keyboard.

The comments were originally given in Japanese.

## 5. Discussion

Based on the above findings, we can state the following. First, from

the results in 4.1, no differences were observed in both the time they needed and the number of the words looked up in either condition. Furthermore, the participants' scores in vocabulary and reading comprehension quizzes with smartphone dictionary apps did not differ from those with pocket E-dictionaries. These were ascertained statistically as the results of the *Wilcoxon signed-ranks test* at the .05 level. It means that the interface design of each dictionary device did not directly affect learners' lookup behavior related to L2 study.

The results imply that the potential to enhance language learning exists in both dictionaries. Therefore, *Hypothesis 1: The number of lookups in using pocket E-dictionaries will be more than that of smartphone dictionary apps* and *Hypothesis 2: The time to complete the assigned task in using smartphone dictionary apps will be shorter than that of pocket E-dictionaries* were not supported.

Second, as indicated in 4.2, no significant difference in the recognition task scores was found in either condition even though the retention rates of their looked-ups varied as was shown in Table 5. The assumption that neither mobile device requires an elaborate look-up process seems to be close to the mark. Both devices seem to result in similar learning, thus, *Hypothesis 3: The retention of the lookups in using smartphone dictionary apps will be the same as that of pocket E-dictionaries* was supported.

Third, as was shown in 4.3, the participants evaluated smartphone apps highly in item (9) "*This dictionary was handy.*" Since they always have their smartphone with them, this response was considered to be taken as a matter of course. Nevertheless, as displayed in Table 6, they overwhelmingly had a preference to pocket E-dictionaries in other responses, where large differences between the dictionaries were observed.

It is a notable that these responses were closely connected with dictionary's interface design. Note that information concerning the target words was the same and shown on a display in either case. The size and the design of each device, however, differed in respect of "a physical keyboard." Furthermore, the participants' response to item (19) "*I*

*had to get the knack for using this dictionary.*” was negative, although the participants were considered to manage dictionary apps on their phones skillfully. Their feedback to the item in Table 8 indicates that they might consider the use of smartphone dictionaries required some skills in handling. In other words, they appeared to value pocket E-dictionaries more as an educational device.

Another remarkable opinion from the participants was the response to item (17) “*This dictionary is appropriate for beginners in learning English at a primary or lower secondary school.*” which was relatively low for both dictionaries. This can be interpreted to mean that the participants regarded dictionaries on mobile devices as convenient, but that they considered paper dictionaries to be still reliable for L2 study. One interpretation could be that they thought that there is relationship between the complexity of the lookup process and L2 acquisition, as Hulstijn advocated in “*the depth of processing*” hypothesis. Thus, they recommended paper version of dictionaries to beginners in L2 learning. From these findings, we confirmed that *Hypothesis 4: Participants prefer smartphone dictionary apps to pocket E-dictionaries* was not supported.

## 6. Concluding Remarks

The results derived from the experiment described above reveals the following. First, it appears that the interface design of smartphone dictionary apps does not directly have an influence upon L2 learners’ lookup behavior and the effect on their learning. There were no significant differences in the number of lookups, retention rate of looked up words, and the time needed to complete tasks between two dictionaries.

Second, the interface design of dictionaries might be an incentive to L2 learning. Although today’s digital natives are considered to be good users of mobile devices, they showed some preference for pocket E-dictionaries. The size of screen display and the design of each device affected the L2 learners’ impression. In fact, they regard a physical keyboard of a pocket E-dictionary as useful for L2 learning.

Third, some digital natives still emphasize the importance of using paper version of dictionaries at the beginning of L2 learning even though they never use them in daily study themselves. This issue has not been sufficiently investigated yet.

We should continue investigating the applicability of the findings on the present study. These findings, the author hopes, will shed some light on further research to consider the potential to promote L2 learning with dictionaries with mobile technology.

\*This article is a revised and combined version of the papers presented by the author at the 54th Annual Conference of the Japan Association for Language Education and Technology (LET) in Fukuoka and the 6th Foreign Language Education and Technology Conference (FLEAT VI) at Harvard University in Cambridge, Massachusetts.

## NOTES

1. The TOEIC (Test of English for International Communication) test was conceived in Japan and created by the Educational Testing Service (ETS), a U.S. nonprofit test development institution, as a common global yardstick for measuring English skills. The test is administered in some 150 countries around the world.
2. EIKEN is Japan's most popular and widely administered English qualification for nearly fifty years backing of the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT). EIKEN-administered tests are taken by more than 2 million examinees annually and at over 18,000 locations.

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## WORKS CITED

- Aust, Ronald, Mary Jane Kelley, and Warren Roby. "The use of hyper-reference and conventional dictionaries." *Educational Technology Research and Development*, 41.4, 1993: 63-73. Print.
- Béjoint, Henri. *The Lexicography of English*. OUP: NY, 2010. Print.
- Hulstijn, Jan.H. "Retention of inferred and given word meanings: Experiments in incidental vocabulary learning." Arnaud, P.J.L., and Béjoint, Henri. (Ed.), *Vocabu-*

- lary and Applied Linguistics*. London: Macmillan: 1992: 113–125. Print.
- IICP. *Annual Report 2015*. Tokyo: Institute for Information and Communications Policy, 2015. Web. 25 Jan. 2016.
- Knight, Susan. "Dictionary use while reading: The effects on comprehension and vocabulary acquisition for students of different verbal abilities." *The Modern Language Journal*, 78. 3. 1994: 285–299. Print.
- Koyama, Toshiko, and Osamu Takeuchi. "Printed dictionaries vs. electronic dictionaries: A pilot study on how Japanese EFL learners differ in using dictionaries." *Language Education & Technology*, 40, 2003: 61–79. Print.
- . "Comparing Electronic and Printed Dictionaries: How the Difference Affected EFL Learning." *JACET Bulletin*, 38. 2004: 33–46. Print.
- Laufer, Batia. "Electronic dictionaries and incidental vocabulary acquisition: Does technology make a difference?" In U. Heid, S. Evert, E. Lehmann & C. Rohrer (Eds.), *Proceedings of the EURALEX 2000*, 2000: 849–854. Print.
- Lupescu, Stuart. and Richard.R. Day, "Reading, dictionaries, and vocabulary learning." *Language Learning*, 43. 2, 1993: 263–287. Print.
- Mugglestone, Lynda. *Dictionaries: A Very Short Introduction*. OUP: NY, 2011. Print.
- Prensky, Marc. "Digital Natives, Digital Immigrants." *On the Horizon* 9.5 2001. Web. 5 Jan. 2016.
- Shizuka, Tetsuhito. "Efficiency of information retrieval from the electronic and the printed versions of a bilingual dictionary." *Language Education & Technology*, 40, 2003: 15–33. Print.
- Siegel, Sidney. and N.John Castellan Jr. *Nonparametric Statistics for the Behavioral Sciences*. (Second ed.). Singapore: McGraw-Hill Inc. 1988. Print.
- Smith, Aaron *et.al.* "U.S. Smartphone Use in 2015" *Pew Research Center Publications*. 2015. Web. 11 Dec. 2015.
- Tono, Yukio. *Research on dictionary use in the context of foreign language learning: Focus on reading comprehension*. Tubingen: Niemeyer, 2001. Print.

## APPENDIX

### Text A

#### 1. To complete each item, choose the best word or phrase form among the four choices.

- 1) We may encounter strong (     ) during the flight, so please keep your seat belt fastened when you are seated.
  1. affection                      2. inspection                      3. turbulence                      4. interference
- 2) Bob dislikes eating out with his sister because she is so (     ). Sometimes it takes her 10 minutes just to place her order.
  1. nonsensical                      2. indecisive                      3. unconditional                      4. defensive
- 3) Although John could speak Japanese fluently, his inability to read or write it was major (     ) when he was looking for a job in a Japanese company.
  1. obstacle                      2. standstill                      3. deficit                      4. incentive
- 4) The visiting circus featured, among other things, a chimpanzee that had been trained to (     ) the movements of a ballerina.

1. mimic                      2. falsify                      3. favor                      4. defer
- 5) After years of competing against one another, the two golfers have developed a deep feeling of (     ) respect. Neither of them underestimates the ability of the other.
1. majestic                      2. variable                      3. neutral                      4. mutual
- 6) Clara's father scolded her so (     ) for not doing her homework that she burst into tears and ran from the living room.
1. fitfully                      2. humbly                      3. harshly                      4. lamely
- 7) The police officers were forced to give up their (     ) of the thief when they lost sight of him in the crowded town square.
1. vocation                      2. pursuit                      3. venture                      4. mission
- 8) Although the company bought the new electronic dictionary for everyone to use, Junko tended to (     ) it, claiming that she needed it more than everyone else.
1. conventionalize                      2. paralyze                      3. monopolize                      4. mobilize
- 9) The town mayor did everything he could to make sure the queen was treated with the (     ) respect during her visit.
1. utmost                      2. furthestmost                      3. innermost                      4. outermost
- 10) Customer records are highly (     ). Please keep them in a secure place at all times.
1. consecutive                      2. confidential                      3. concise                      4. considerate

2. *Read the passage below and choose the best answer from among the four choices for each question.*

#### *The Greenbrier Hotel*

The Cold War has been over for more than a decade, but across the United States there remain many reminders of a period when the shadow of nuclear conflict fell over the whole world. One of the most fascinating of these is the Greenbrier Hotel in West Virginia. For over two centuries, the Greenbrier has been known as a playground for the wealthy, but in 1992 *Washington Post* reporter Ted Gup revealed that the hotel had also served another, secret purpose. A mammoth underground bunker, or complex, intended as an emergency center of government for the U.S. Congress in the event of a nuclear war with the Soviet Union, had been built under a hill adjacent to the hotel.

Construction of the bunker—condemned Project Greek Island—began in 1959 and was finished in 1962, just as the Cuban missile crisis occurred. To disguise the bunker's construction, the government paid for a new wing to be built onto the hotel. The project's scale was remarkable, including two-foot-thick concrete walls and 28,000-pound steel doors, all buried under 700 feet of earth—clearly not just another hotel ballroom. Nevertheless, the most impressive achievement was still to come. Although thousands of workers were involved, and hotel staff suspected something odd was going on, patriotism made sure the secret was kept.

In the end, though, the bunker proved to be impractical. Tracking down all members of Congress and transporting them to the Greenbrier would have taken much longer than the time required for a nuclear missile to reach the Capitol from the other side of the world. In addition, a mass departure of politicians from Washington would have been sure to alert the Soviets that an American first strike was about to occur. Still, as the debate over national security versus the public's right to know continues today,

many of us are bound to wonder how many more such projects are waiting to come to light.

- 1) In 1992, a reporter from the Washington Post revealed
  1. a scandal concerning top politician's use of a luxury resort.
  2. construction plans for an emergency bunker for the general public.
  3. that the government was planning to build a secret missile base.
  4. the existence of an underground shelter intended to hold Congress.
  
- 2) According to the writer of the passage, what was one remarkable feature of the Greenbrier Hotel project?
  1. The U.S. government believed the hotel could withstand a nuclear attack.
  2. The bunker was used only for a short time despite the huge cost of building it.
  3. All the people involved in the bunker's construction kept it a secret for decades.
  4. The complex was complete long after the danger of nuclear war had disappeared.
  
- 3) What does the writer's conclusion suggest?
  1. The Greenbrier Hotel is something that U.S. citizens had no right to know about.
  2. The Greenbrier Hotel would likely have been a major target of a Soviet attack.
  3. Project Greek Island was probably not the only big secret of the Cold War.
  4. Project Greek Island was the most successfully kept secret of the Cold War.

*From the pre-1st Grade test of EIKEN, 2006-1*

## 投稿規定

(1) 投稿は岩崎研究会会員に限る。但し、非会員であっても論文審査委員から推薦のあった場合は特別に認める。(2) 論文の内容は未発表のものに限る。(3) 用語は英語に限り、原則として native check を受けたものとする。(4) 注 (note) は後注とし、章ごとに通し番号を付ける。(5) ギリシャ字、ロシア字以外の特殊文字はできるだけローマ字化してほしい。音声記号は国際音声学協会 (IPA) 所定のものを用いる。(6) 引用文献: 書式は MLA Style に従う。(7) 枚数: 論文はワープロ原稿で、1 行はアルファベットの小文字で 70 字、450 行以内、A4 判のハードコピー 1 部に CD-R を添える。(8) 原稿はすべて論文審査委員による審査の上採否を決定する。共同執筆論文を別として、論文の掲載は毎号 1 人 1 篇とする。(9) 都合により短縮を求めることがある。印刷上の体裁および論文の掲載年度については編集委員に一任する。(10) 抜刷は 20 部までを無料で、別に本誌 1 部を呈上する。(11) 原稿は随時受付ける。(12) なお、詳細は別に定める。

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編集後記 本号の掲載論文は 3 編とも辞書学関連のテーマを取り扱った単著論文です。それぞれの研究題目を独創的なアプローチで考究した成果がはっきりと読み取ることができます。同時に、岩崎研究会会員の研究活動の幅の広さがうかがえます。3 論文とも辞書学者や辞書編集者向けの専門的な論文であることは言うまでもありませんが、辞書編集・執筆に関与している人たちだけでなく、辞書さらには言語の諸問題に関心を持っている学部学生や一般の人も興味を持って読める論文であることは注目に値します。これらの論文を読むことによって刺激を与えられ、今後とも辞書学や辞書編集に興味を持つ人が増えることを期待します。

(2016 年 5 月 1 日 S. M.)

