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Challenges of Online Learner's Dictionaries to be Used in Smartphones

1. Introduction

The rapid increase in the number of smartphone users in the last several years has encouraged online learner dictionary publishers to create a mobile version or a smartphone application of their dictionaries. Nevertheless, as shown in this paper, the conversion to a mobile version of the current online learner dictionaries seems to be done without a careful conceptualization and sound theoretical foundation. This paper presents some challenges faced by online learner dictionaries to be used in smartphones. The discussion focuses on the implementation of the modern theory of lexicographical functions, in order to suggest new principles for converting online learner dictionaries into a smartphone application.

Since the mass introduction of smartphones in 2007 by Apple Inc., the number of smartphone users and the number of smartphone brands in the world have increased dramatically. According to the news published at www.emarketer.com (11 December 2014), the number of smartphone users in 2013 was 1.31 billion, in 2014 was 1.64 billion, and is predicted to exceed 2 billion by 2016. The website also reported that based on the number of smartphone users in 2014, the top five countries are China (519.7m), US (165.3m), India (123.3m), Japan (50.8m), and Russia (49.0). From those figures, we can see that the number of smartphone users who are not native speakers of English is a lot higher than the number of smartphone users who are native speakers of English. In addition, given the fact that English is an international language, there is a big demand for English dictionaries on smartphones. This has encouraged dictionary publishers to convert their online dictionaries into a smartphone application.

The conversion of online dictionaries into a smartphone application should not only be done by computer programmers. It is true that with some programming, an online version of a dictionary can be made into an application that can be installed in smartphones. However, there are at least two technical issues that need to be taken into account. The first issue is the screen-size. The most common screen size of a desktop computer or a laptop computer that is usually used for opening an online dictionary is 14 inch (21cm width x 28 cm height), while the average screen size of a smartphone, according to www.smartphones.specout.com, is 4.5 inch (5.6cm x 10cm). The smaller screen size means that there are several features of the online dictionary that should be excluded or hidden when it is to be converted to a smartphone application. The second issue is the number of buttons or keys. A computer keypad has a lot more keys on its keyboard if compared with that available in a smartphone. Consequently, when converting an online dictionary into a smartphone application, we need to address those two issues, particularly by considering the user situations and user needs.

2. Determining the Main Points of the Lexicographical Function

The discussions on user situations and user needs in lexicography are within the domain of the modern theory of lexicographical function. Tarp (2008: 81) defines a lexicographical function as “the satisfaction of the specific types of lexicographically relevant need that may arise in a specific type of potential user in a specific type of extra-lexicographical situation”. There are three main points in that definition: (1) the specific types of lexicographically relevant need, which is the user needs; (2) a specific type of potential user, which is the profile of the target users; and (3) a specific type of extra-lexicographical situation, which is the user situations. These three main points need to be determined before converting an online dictionary to a smartphone application.

The lexicographically relevant needs of smartphone users can be identified by looking at the user situation, and the user situation can be determined by knowing who the users are, i.e. the profile of the users. If we consider a dictionary smartphone application as a business endeavour, we should focus on the needs of the biggest number of potential users. In the previous section, it has been stated that there are more smartphone users who are not native speakers of English, than those who are native speakers of English. In addition, according to demographic information, teenagers-adults aged between 16 and 24 are the groups with the highest rate of using smartphones, i.e. 88% (cf. www.zeendo.com). This means that a possible profile of the user is a high school or university student who is not a native speaker of English. The possible user situation is when he is reading his English textbook, and finds a word that he does not understand the meaning. He does not want to open his laptop to consult an online dictionary, and he does not want to fetch a printed dictionary from the bookshelf. He prefers opening a dictionary application on his smartphone that is always placed in his pocket. The next section explains how this specific user need is addressed by an English learner's dictionary smartphone application.

3. An Online Learner's Dictionary vs. A Smartphone Learner's Dictionary

Among the various titles of English learner's dictionaries, the most popular one in the world is the *Oxford Advanced Learner's Dictionary* (OALD). This can be due to the fact that it is the first English learner dictionary to be published (i.e. since 1948 by Oxford University Press), long before other English learner's dictionaries (cf. *Longman Dictionary of Contemporary English* in 1978, *Collins Cobuild English Dictionary* in 1987, *Cambridge Advanced Learner's Dictionary* in 1995). The OALD is available in various forms, including an online version and a smartphone application version.

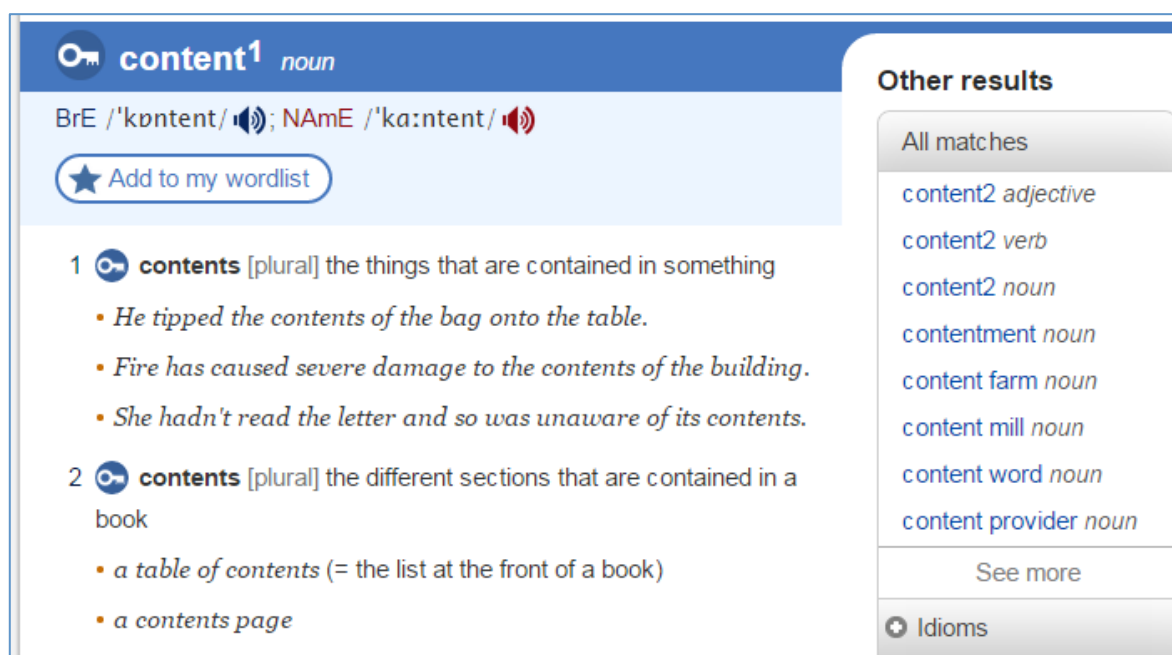
We shall compare the dictionary consultation process of the user (identified in the previous section) when using the online version and the smartphone application version of the OALD. Let us assume that the user is reading the textbook entitled *Management* by Griffin (2012), and on page 421, he finds the following sentence: “a person with less self-esteem may be more *content* to remain in a lower-level job.” He wants to know the meaning of the word *content*. Figure 1 shows the screenshot of the online version of OALD when the user types the word *content*.

Figure 1: The screenshot of the online version of the OALD



As we can see in Figure 1, when the user types the word *content* in the online version of the OALD, a pop-up window will show the words related to the searched word. When the user clicks one of the words shown in the search results, or press enter after typing the word *content*, he will be presented with the first entry of that word in the middle of the computer screen. The other results, including the homonyms are shown in a box on the right side of the screen (see Figure 2).

Figure 2: The search result from the Online version of the OALD



If the user knows that he needs to look for an adjective, not a noun, he will click the headword (under the menu entitled **Other results**) on the right side of the screen (i.e. *content2 adjective*) to see the right entry. However, if he does not know the word class of the word, he will need to click each of the headwords until he finds the right entry and sense of the word. This can be done quite

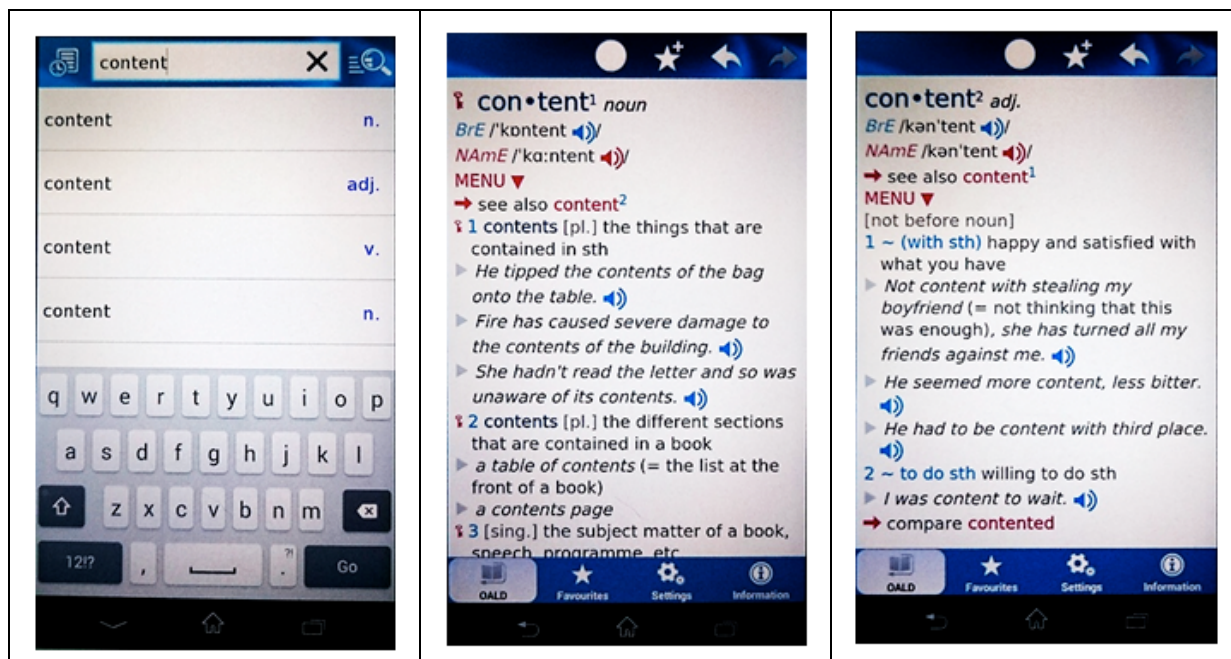
easily when using a computer. However, it will be inconvenient when it is done with a smartphone, as the screen and the keyboard are a lot smaller. Consequently, the OALD presents different forms of search results in its smartphone application version.

If the user consults the smartphone application version of the OALD to find the meaning of the word *content*, he will be presented with the homonyms directly after he types the word *content* (see Figure 3, the picture on the left). This is different from that in the online version of the OALD (cf. Figure 1). The smaller screen size of a smartphone makes it inconvenient to put an additional box menu (i.e. **Other results**) like the one shown in Figure 2. This means that the OALD has made some adjustments for the smartphone application version of the dictionary. A further investigation, however, shows that there are further adjustments to be made if the dictionary wants to satisfy the user needs better. This is explained in the next section.

4. Suggestions for Future Smartphone Dictionary Application

Continuing from the previous section, when the user searches for the word *content* using the smartphone application, he will first be presented with the search result as shown in Figure 3 (picture on the left). If he knows that he is looking for an adjective, he will select the second one from the list, i.e. "content adj". However, if he does not know that he is looking for an adjective, he will most likely choose the first one on the list, i.e. "content n", and will see the screen shown in the middle picture in Figure 3. After reading that entry (i.e. for the word *content* as a noun), he realizes that it is not the sense or definition that he is looking for. He will click the back button on his smartphone. Unfortunately, the back button does not bring him to the previous screen, i.e. the search result of the word *content*. Instead, he is shown the first page of the dictionary, where he will have to type in the word again. Actually the OALD provides a quicker access to move from one headword result to the next, that is, by swiping the screen to the left. However, there is no explicit instruction for this, so the user may just know it by accident.

Figure 3: The search result from the smartphone application version of the OALD



If we take a closer look at the search result in Figure 3 (the pictures in the middle and on the right side), there seem to be too much information presented. As mentioned in the previous section, the user is reading a text and needs to know the meaning of a particular word. Consequently, the most relevant information is definition of the words. The other information, shown in Figure 3, i.e. pronunciation, examples, etc. is not too important to meet the text reception need of the user. As a matter of fact, the information available in the entries of the smartphone application version of the OALD is actually the same as those of the online version. It is quite convenient to see a lengthy entry on a computer screen, but it is not convenient to see it in a smartphone screen. The smartphone application version of the OALD should provide a quick option to hide the additional information, such as the pronunciation and the examples.

Since the speed of access to the information is highly important in today’s world, a smartphone application version of a dictionary should also provide the quickest access to the users. In the previous example, since we know that the user situation is reading a text, and finds a word that he does not understand the meaning, he needs to understand the meaning of that word as quick as possible, so that he can continue reading the text. By knowing these user situation and user need, we can provide a better access to this user. The one suggested in this paper is shown in Figure 4, the picture on the right side.

Figure 4: The comparison of the search results

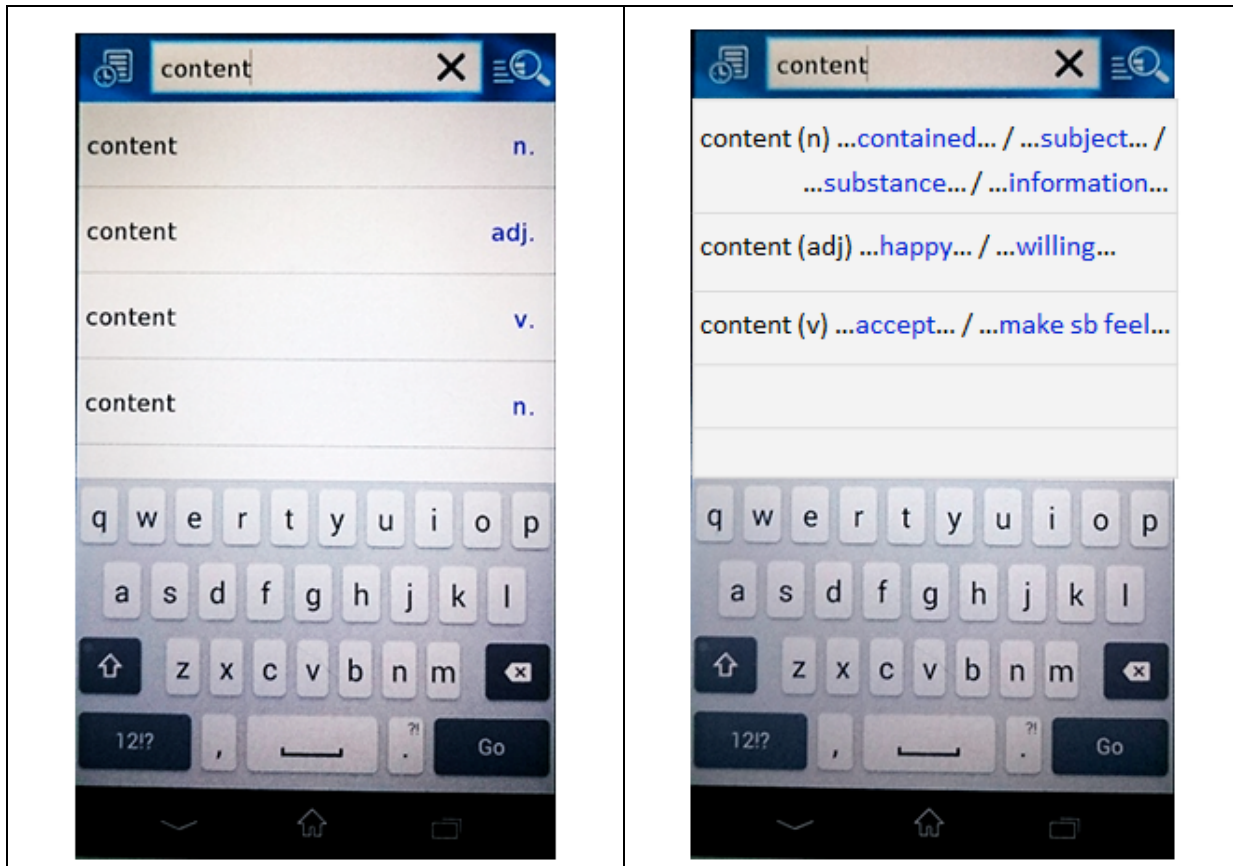


Figure 4 presents two pictures. The one on the left is the actual search result when a user is typing the word *content* in the smartphone application version of the OALD. The one on the right is the suggestion made in this paper. The picture on the left requires the user to know whether he is looking for a noun, an adjective, or a verb. It is quite unlikely for a user, who does not major in the English language, to know the word class of a word that he does not know the meaning. Therefore, showing the list of words with the word classes, or the homonyms, will not be really helpful for the users. What is more important is listing the meaning items. This is similar to the opinion of Bergenholtz and Agerbo (2014: 125) who state that the identification of meaning items is comparable to the identification of different words, and that the listing of homonyms are not really relevant for meeting the needs of the users. Consequently, listing the meaning items are more useful than just listing the homonyms. As shown in the picture on the right side in Figure 4, a kind of reduced definition is shown for the headword. This will enable the users to know directly the meaning items of the word. If the user wants to know further about a particular meaning item, he can click the reduced definition to see the complete definition.

5. Conclusion

The last several years have seen the increase in the number of smartphone users, and most of them are not native speakers of English. Most of these smartphone users are teenagers-adults aged between 16 and 24 years-old. This means that there are a big number of high school and university

students who use smartphones and are not native speakers of English. Consequently, there is a high demand for English learner's dictionary smartphone application. This paper has shown how a popular English learner's dictionary shows some differences between its online version and its smartphone application version. Some adjustments have been made to cope with the smaller screen and keyboard of smartphones. However, further adjustment should be made. A better conceptualization of a dictionary for a smartphone application can be achieved by using the solid theoretical foundation.

In this paper, the theoretical foundation proposed in the modern theory of lexicographical function which focuses on the specific user needs, user profile, and user situation. Understanding those three main aspects will result in smartphone dictionary application that can better satisfy the specific needs of the specific users in a specific user situation. An example given in this paper is for a user who is a university student and a non-native speaker of English, who is reading an English text, and needs to know the meaning of a word. In this case, it is suggested that the smartphone dictionary application presents only the relevant data (i.e. the meaning items or definitions) in the quickest way (i.e. using a kind of reduced definitions). This will reduce the lexicographical information costs (see Nielsen 2008 for the discussion on search-related information costs [SRIC] and comprehension-related information costs [CRIC]). In addition, since a smartphone can be personalized, the smartphone dictionary application should also be able to be personalized and adapted to the needs and the profile of the user (see Kwary 2012 for the discussion on adaptive hypermedia, and Kwary 2013 for personalization of business dictionaries on mobile applications).

6. References

- «Smartphone users by age», retrieved from: <http://zeendo.com/info/top-countries-with-most-smartphones-users-in-the-world>. Accessed 2 May 2015.
- «2 Billion Consumers Worldwide to Get Smart(phones) by 2016», retrieved from: <http://www.emarketer.com/Article/2-Billion-Consumers-Worldwide-Smartphones-by-2016/1011694>. Accessed 2 May 2015.
- «Best Smartphones Comparison 2015 – Reviews and Ratings», retrieved from: <http://smartphones.specout.com>. Accessed 2 May 2015.
- BERGENHOLTZ, Henning and Heidi AGERBO (2014): «Meaning Identification and Meaning Selection for General Language Monolingual Dictionaries», *Hermes* 52, pp. 125-139.
- GRIFFIN, Ricky W. (2012): *Management 11th ed.* Mason, OH, Cengage Learning.
- KWARY, Deny A. (2012): «Adaptive hypermedia and user-oriented data for online dictionaries: A case study on an English dictionary of finance for Indonesian students», *International Journal of Lexicography* 25(1), pp. 30-49.
- KWARY, Deny A. (2013): «Principles for the Design of Business Dictionaries on Mobile Applications», *Hermes* 50, pp. 69-82.
- NIELSEN, Sandro (2008): «The Effect of Lexicographical Information Costs on Dictionary Making and Use», *Lexikos* 18, pp. 170-189.
- TARP, Sven (2008): *Lexicography in the Borderland between Knowledge and Non-knowledge: General Lexicographical Theory with Particular Focus on Learner's Lexicography*. Tübingen, Niemeyer.

TURNBULL, Joanna (Ed.) (2010): *Oxford Advanced Learner's Dictionary 8th ed.* Oxford, Oxford University Press.