CS147 Assignment 2

User Observation -- Breakdown of Microsoft Word

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The Experiment

The experiment was conducted on Sunday, 8 pm at our apartment. The version used was Word 2000. The two subjects were: Joanne Dong, 21, Female and Laura Banazyaski, 23, Female. Both subjects were familiar with Microsoft Word 2000.

The Breakdowns:

Breakdown 1: Formatting the margin for the “authors” segment

The subjects wanted to format the margin for the list of authors at the right column so that all the names (Henry… Winograd) can fit into one line. The subjects only wanted to adjust this line since they had already formatted the rest of the column. They tried to format it by keying in the exact widths, which they had gotten by measuring from the hard copy, into the Page Setup (Margins). But instead of modifying only the “authors” segment, the entire column (from the “authors” till the “Figure 1”) was also adjusted.

This breakdown was because the two subjects were unfamiliar with the concept of “Section” used in Word. The subject didn’t realize that the way they built the two columns (from “Meredith” to “Figure 1…” ) made the entire body into one section¹. Hence formatting by pointing anywhere within the section will modify the entire body instead of only part of it.

The fact that the subjects did not pay much attention to the term “This section” that was indicated in the pop-up window for page setup (Fig. 1) indicates that there is a

¹ The subjects built the body text column by column. They began from the left column, first pasted the author segment “Meredith…”, followed by “Abstract” and so on. After they’ve completed the left column, then they proceed to the right column, started pasting “Henry…”, etc. In this way, Word recognized the two columns as one section.
mismatch between the subjects’ mental model about the term “section” and that of the program.

Breakdown 2: Strange gap that cannot be get rid of

The subjects couldn’t get rid of the space at the last line of left column (Fig. 2). Deleting the space caused the entire sentence to move to the second column and joined with the “authors” (Fig. 3). They couldn’t figure out what to do and gave up trying.

Once again, the breakdown was because the program recognized the two columns as one section. Deleting the space made the sentence too long to fit into the spaces below. Thus Word automatically adjusted it to join with the following texts in the same section.

For the above two breakdowns, WYSIWYG interface allows the subjects to see that there was something wrong with their formatting. But there were not enough “explicit” clues for the subjects to pick up during the interaction with the system that they were actually dealing with the whole chunk of texts (two columns) instead of only the intended “authors” segment or the “gap” segment.
Breakdown 3: Helvetica font is unavailable in Word

The subjects accidentally changed the font of the title to Arial. But when they wanted to change it back to Helvetica (as it was in the original), they couldn’t find Helvetica from the default font list. They left it as it was since they thought this was the limitation of Word.

But we couldn’t believe that Helvetica is not included in Word. So after some trial and error, we discovered that we could actually change the font to Helvetica by typing the name into the little window of the pull-down menu. We don’t know if this is the proper way for adding new font onto the default list (but the fact that the texts can be changed to Helvetica font indicates that this font type is available in Word). However, we think that this “type-in” font selection is inconsistent with the convention of a pull-down menu that we experienced from the Web. Generally, a pull-down menu means users are constraint to the available list. Hence in this case, the alternative channel for selecting a font, i.e. by typing in, is not obvious to its users because of “the display of information” (i.e. using the pull-down menu).

Conceptual Models

The most significant place in which the conceptual model that the subjects were operating did not match that of the program is about the concepts of “section” and “paragraph” used in Word. To both subjects, “section” and “paragraph” were synonymous. Hence even though the phrase “this section” had showed up in Page Setup (Fig 1), it did not send the right information to the subjects that they were formatting a section instead of a paragraph. In their views, the “authors” segment looked very much like a paragraph on the screen, and linking paragraph to Page was natural in the subjects’ mental model. As one of the subjects said, “I want to change the line of this paragraph, therefore I go to the Page Setup”. In other words, the subjects were interacting with the system using their own mental model of
“section” (or paragraph) instead of that of the program. The mismatch of the terms used caused the communication breakdown between the subjects and the program and thus generated a lot of frustrations.

**Surprise**

I was surprised by the way the subjects formatting the margins. Instead of adjusting the tags (indents) from the top (virtual) ruler, they did it by keying in the exact figures into the Page Setup. These different approaches between the subjects and I indicate that we had different conceptual models about the virtual ruler lying on top of the document. I see the top (virtual) ruler resemblance a real ruler, which is helpful in setting the margins and formatting. But when I asked the subjects why they didn’t make use of the top (virtual) ruler to set the margins, one of the reply was, “oh, I didn’t see the ruler, it has never registered in my mind!” This difference points to a simple fact that what appears to be natural to a user might not be so for other users.

**Reflection**

This experiment gave me the real sense that software designing is indeed a very challenging job and the importance of user interface design. It showed me vividly that different users could (or probably) approach the same task in different ways (e.g. use of the top ruler). The same interface and metaphor might infer different concepts to different users (e.g use of pull-down menus and the terms “section” and “paragraph”). Thus for a good software, not only it has to be flexible enough to accommodate different users’ prior experience and preferences, it has to make sure that all the communication that takes place through the interface is clear enough to send the right message to its users. The challenge will be multiplied for software like Word that has such diverse users groups.