Pragmatic force in biology papers by British and Japanese scientists

Akiko Okamura
Takasaki City University of Economics, Japan

The presentation of scientific findings in English is all the more crucial for scientists because even in non-English speaking countries, scientific journals are published in English. Some non-English speaking researchers are very active in publishing in English. When we look through scientific journals, we can find substantial amounts of contributions from non-English speakers outside English speaking countries. As writers of scientific articles are expected to share the same norms of language use in their field and publication requires a rigorous peer-reviewing system, we would not expect any grammatical mistakes or incomprehensive sentences in non-English speakers' writing.

However, when we examine the effectiveness of language use, it is possible to imagine differences between scientific research articles of English speaking and non-English speaking writers. The difference may be subtle but may cause disadvantages to non-English speakers. To help them use English effectively, we need to clarify what type of difficulties they have in presenting their argument in scientific research articles.

One lexical item to be examined for this purpose is how writers promote their role in the presentation of research findings. In this study, I focus on the use of "we" and verbs to go with "we" through the examination of the number of "we", type and tense of verbs with "we" in scientific research articles written by British and Japanese writers.

I chose biology papers as they have the same sections: introduction, method, results and discussion. I decided to analyse sections excluding the method section because "we" is not a common feature in the method section and it has not recently given the same importance in the research papers analysed. In fact, in all the papers analysed, the method section was placed at the end of the paper in a small letter (or font?). Thus I analysed "we" in the three sections separately and counted "we" and verbs to go with "we". As I intend to examine the tense of verbs, I treated present tense and past tense as different verbs.

23 biology papers (9 British and 14 Japanese) were collected from two American journals published in 2001: journal of plant biology and journal of plant physiology. The criteria for deciding British and Japanese writers' papers were: the writers' affiliation and/or names of the writers. As there are many collaborative work between two institutions, I avoided papers as a result of collaboration of institutions in English speaking countries and Japan.

As can be expected, the analysis shows that as members of the same discourse community, both British and Japanese papers have many features in common, which would illustrate the general picture of the use of "we" and verbs to go with "we". One is that British and Japanese papers use "we" for exclusive use, and the majority of verbs with "we" were experimental verbs (verbs relating to research activities and their procedure) in past tense and they mainly appeared in the result section. The other is the combination of subject and voice of verbs. Discourse verbs (verbs relating to saying) tended to prefer inanimate subjects instead of "we" in active voice such as "this study shows", while cognitive verbs (verbs relating to thinking) tended to be in passive voice.

However, when examined more closely, they showed differences. First, British seem to be more selective of the type of verbs with "we". One example is that British papers tended to combine two verbs to emphasise the role of researchers such as "we decided to use..." and "we attempt to rescue..." much more than did the Japanese papers. Another example is that Japanese tended to use
"we" with discoursal verbs much more than British. British used discoursal verbs such as "demonstrate" or "suggest" with inanimate subject much more than did Japanese; they are more likely to say "this study suggests" rather than "we suggest". It seems that British papers try to create a sentence to accommodate impersonal nature of scientific discourse.

Second, British papers changed the main tense of verbs to go with "we" along with the development of their presentation. They shift from "present perfect" in introduction section to "past" in results section and "present" in discussion section. "Present perfect" may create a link to previous studies in the introduction section. Then by switching from "past" in the results section to "present" in discussion section, British papers seek for the generalisation of their findings. British papers seem to use tense to strengthen their argument. By contrast, Japanese papers mainly used past tense throughout the paper.

These findings suggest that differences may be related to roles that writers give to "we" through the choice of verbs; in British papers "we" can change from a navigator of to a decision maker and to an actor in research. British papers used two verb construction with "we" such as "we choose to" and "we attempted to" to present writers as a decision maker, while they used present perfect such as "we have described" and "we have analysed" to navigate readers. They may use "we compared" and "we found" to show their role as an actor in research activities. In contrast, Japanese papers use "we" solely as an actor of research. Therefore, it can be said that British papers navigate readers by giving "we" wider and more complex roles than do Japanese papers.