The Economic Journal of Takasaki City University of Economics vol.46 No.4 2004 pp. 39～61

How do British and Japanese scientists publish their academic papers in English?

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Writing a research article in English is a daunting task for novice non-English speakers. Previously, to help them in writing, researchers have analysed the structure or linguistic forms of published academic texts which they need to master. To examine difficulties on publication process, studies have examined situations in developing countries or in countries where English is a working language for academics. On the pacific rim coutries such as Japan where English is a foreign language, researchers' difficulties may be different from those previous examined. Furtheremore, experienced researchers may share their approach to publication regardless of their language backgrounds.

This study, therefore, examines the knowledge and the language required for publication process and Japanese researchers' difficulties through interviewing 14 British and 15 Japanese academics in scientific and engineering departments. The findings suggest that to understand the publication process, researchers need to understand the peer-review system which creates a small exclusive discourse community within the scientific community. Japanese researchers' comments show that non-English speakers need to have writing skills not only for the research article but also for correspondence with the editor to defend their claims.

1. Introduction

As English is an international language, writing skills in English are a pre-requisit to join the international discourse community. To help non-English speakers publish their papers, researchers have analysed both non-English speakers' difficulties through interviewing them (Gosden, 1996; Parkhurst, 1990; Shaw, 1991; St. John 1987) and the structure or linguistic forms of academic texts which they need to master (Crooks, 1986; Gosden, 1992b, 1993, 1995; Hopkins and Dudley-Evans, 1988; Swales, 1985, 1990; Weissberg, 1984 for example).

Analysis of the structure of sections in a research article shows the expectations of a professional discourse community (Brett, 1994; Nwogu, 1997; Thetela, 1997). Linguistic forms reflect writers' negotiation of their claim with readers through reporting verbs (Thomas and Hawes, 1994; Thompson and Ye, 1991; Thompson, 1996), tense (Gunawardena, 1989; Hanania and Akhtar, 1985; Riddle, 1986), the voice for verbs (Shaw, 1992) or hedging expressions (Myers, 1989; Hyland, 1996a, b, 1997).

It has been accepted that construction of an academic text carries both a cognitive and a social dimension (Bruffee, 1986; Flower, 1994; Nystrand 1989), and published texts need to be understood as interaction between the writer and members of a discourse community (Myers, 1985, 1989, 1990; Hyland, 1996a,b, 1997). Recenty there have been various studies examining the publication process (Canagarajah, 1996; Myers, 1985, 1990; Flowerdew, 1999a, 1999b, 2000). Myers (1985, 1990) explains the complex and long process of publication in an academic text, by following the publication of two biology papers.

To get a paper accepted in the journal, the first step is to find the appropriate outlet for the manuscript (Myers, 1985, 1990). Writers need to be aware of the journals available and their pecking order in the field, considering what is expected in each journal and what is involved in publication (Canagarajah, 1996). The more prestigious the journal, the more difficult to have an article accepted, because the expectations of reviewers are higher than in other less prestigious journals.

Selection of a journal may be influenced by factors such as the research assessment exercise of the country researchers are working in. For example, the UK has such a nation-wide exercise every four years, evaluating research not only quantitatively but also qualitatively. The rating of departments decides the amount of research funding institutions expect from the goverment (Patrick and Stanlay, 1996). Thus the motivation for number of publication in more prestigious journals might be higher in the UK than in other countries where publication may have no direct impact on the researchers' publish or perish problems (Canagarajah, 1996, p455).

The second step is to understand the peer-review system by which most international journals operate. In this system, decision on acceptance of an article is based on evaluation of the manuscript by two to three reviewers considered to be specialists in the field.

In publication process, two to three months after submitting the manuscript, writers are expected

to receive a letter of acceptance or rejection from the editor together with reviewers' comments. A letter of rejection is not sometimes total rejection; it may include the editor's suggestion to rewrite according to referees' comments and to resubmit the manuscript for reconsideration. Writers need to read referees' comments carefully and respond to them.

Canagarajah (1996) describes one of the researchers' disadvantages in the Third World being lack of knowledge required for publication obvious to members of the discourse community such as the interpretation of the editor's suggestion to resubmit a manuscript. He points out that ironically, researchers in the Third World are trained only to be an audience for academic journals (1996). There seems to be a clear division among researchers: those who participate in publication and those who do not. Information on the publication process should thus be available to all who intend to become members of the publishing community.

Parkhurst (1990) interviewed nine English-speaking and eight non-English-speaking researchers working in biology, biomedicine, computer science and basic science about the writing process of a research article. She found that sometimes editors may ask authors to rewrite their articles, perhaps based on problems caused by misunderstanding of their claims. Some changes may not improve their writing (Parkhurst, 1990, p174). In this case, writers need to correspond with the editor and may need to defend their claims. As there are occasions when the writer finds referees' comments "unfairly critical" or "rather abusive" (Myers,1990, p64), it is inevitable to have a certain amount of discussion or argument between the editor and the writer. In negotiation, the editorial board tries to put the writer's claim in the background by minimizing the claim while writers may like to maximise their claims, a process which normally ends in compromise (Myers,1990, p80). Thus unless a submission is rejected straightaway, publication is a long process of correspondence with the editor.

Because publication involves an interaction between the editor and the writer, it seems also crucial to examine negotiation from both editors' and writers' viewpoints. As editors may have a different opinion towards publication of an academic article, we need to hear their voices. Understanding of the publication process from both sides may clarify the expectations of the community and the type of language required for membership.

Gosden (1992a) inquired of 154 editors of international scientific journals as to their awareness of non-English speakers' language problems through questionnaires. His findings show that editors'

concerns are mainly clarity and the progression of argument rather than sophisticated language use. As a further step, it would be interesting to ask active non-English-speaking researchers about their experience with language changes required by editor and the degree of correction in the process of publication. Flowerdew (1999a, 1999b) focused on interviewing non-English speakers' difficulties in publication. However, it may be the case that at the international level, established academics may have equal expertise in publication regardless of their different cultural and language backgrounds. It seems useful to examine what English speaking and non-English speaking researchers share and do not share about their experience in publication as it can highlight non-English speaking reserchers' difficulties.

2. Research questions

This study intends to examine the publication process of a scientific research article and the role of language in publication through interviewing 14 British and 15 Japanese researchers.

Because researchers seek to publish in prestigious journals, a question was also added about the criteria of a prestigious journal.

The research questions are:

1. Criteria for selecting a journal in which to publish a research article.

2. Criteria of prestigious journals.

3. Communication between the editor and the writer.

4. Japanese researchers' awareness of language problems in the publication process.

In order to elicit concrete examples in the interviews, four questions were formulated from the research questions. They were:

1. What are the criteria for the selection of a journal to publish your article?

2. What do you mean by prestigious journals?

3. Have you ever been asked by the editor to alter your writing? If so, what have you done about their request?
Have you ever given up after negotiation with the editor?

4. What would be the disadvantages in the publication process of not being an English speaker?

The first three questions were asked of both British and Japanese researchers, and the last question was asked of the Japanese researchers only.

3. Data collection

3.1. Method

The interviews were conducted by the author in the 29 writers' offices to ask the above interview questions. Interviews with the Japanese researchers were administered in Japanese. Each interview lasted from 45 to 90 minutes and each was tape-recorded and transcribed by the author.

3.2. Subject

British researchers

All of the 14 British researchers worked at Newcastle University.

Eleven of them (senior lecturers and professors) had experience serving as a reviewer, and most had served on editorial boards of international journals.

Field	Academic position
Microbiology	2 professors
Civil engineering	1 professor and 2 researchers
Physiology	1 professor
Medicine	1 researcher
Chemistry	2 professors
Biology	1 professor and 3 senior lecturers
Soil science	1 senior lecturer

Japanese researchers

Among the 15 Japanese researchers interviewed, seven were at Tokyo Institute of Technology, two each were at Kyoto University, Osaka University, Osaka City University, one was at Osaka Institute of Technology, and one was at Tokyo University.

Fourteen of these researchers (one lecturer, one associate professor and all professors) had experience as reviewers, and most of the professors had served on the editorial board of an international journal, including journals published in Japan. Most had some experience working outside Japan after completing a PhD in Japan (either short-term- three to four months-or two to four years in countries such as Germany, the Netherlands, Switzerland, the UK and the USA).

Field	Academic position
Biology	4 professors and 1 associate professor
Physics	2 professors
Chemistry	3 professors and 1 lecturer
Mechanical engineering/Civil engineering	1 associate professor 1 professor
Medicine (anesthesiology)Pharmacology	1 lecturer 1 associate professor

4. Findings and discussion

4.1. Criteria of selecting a journal.

Both British and Japanese agreed that the first criterion is the subject area of a journal, then the quality of a journal.

Some researchers chose only one factor for the choice of a journal but others chose more than two.

Table 1

UK, N=14	Japan, N=15
Impact factor 10	Impact factor 4
Subject area 10	Subject area 8
Speed of publication 2	Level of science 3
Circulation 2	Circulation 3
The journal of previous work 1	
Format/free pre-prints 2	

Example 1

Interviewer: When you decided to send your article to this journal, what would the factors, what make you decide to—

British researcher A (a senior researcher in biology):
First thing is the subject itself, whether the subject is suitable for the journal itself, that is the most important criteria—the second would be— what science—and, and thirdly— but perhaps equal with the second one would be are how quickly the journal is likely to deal with the paper, publication time that will take either submitting the paper to actually getting the paper accepted and then in print—that can [a] vary great deal from one paper to another—

Example 2. (English translation)

Interviewer: what are the criteria for sending your article?

Japanese researcher A (a professor in physics):
Well, in my case, if it's application-oriented, I would send a paper to *JJ*, and if it's chemistry-oriented, I mean if we emphasize formula, I would send it here, and then if it's physics, I would send it to *Physical Review* in the US, now—

It is interesting to note that only British researchers mentioned speed of publication, and no less than 10 out of 14 British researchers also mentioned impact factor (the number of times that a paper is cited by others) in their choice of a journal for publication as opposed to Japanese researchers tending to give subject area for their choice. Although impact factor is strongly associated with quality of an article, it can be argued that there exists a subtle difference between them; the British researchers seem to be more sensitive to the statistical figure to judge quality of a journal i.e. impact factor.

These differences seem to be related to a difference in the research assessment system in the two countries. As the UK has a much more rigourous research assessment system than Japan (see *Nature*, 1997, p 444), it seems that researchers need to pay more attention to speed of publication

and impact factor (statistical figure of citation count) in the UK.

Sometimes choice of a journal can be highly social or strategic among the established researchers. Three professors (two British and one Japanese in physics, physiology and microbiology) stated that they may send a paper to be featured in a journal which their colleague has just started. One British researcher mentioned that he sends his article to the British journal to show his research activity to a specific audience such as the research council. It may be the case that the more established the researchers, the more things to take into consideration in choice of a journal.

4.2. Criteria of prestigious journals

Table 2

UK, N=9	Japan, N=14
quality of referees 6	quality of referees 6
quality of science 3	quality of science 11
high impact factor 1	impact factor 2
distribution 1	maintenance of high standards 2
	distribution 2

One Japanse and five British researchers did not respond to this quesiton due to time constraints.

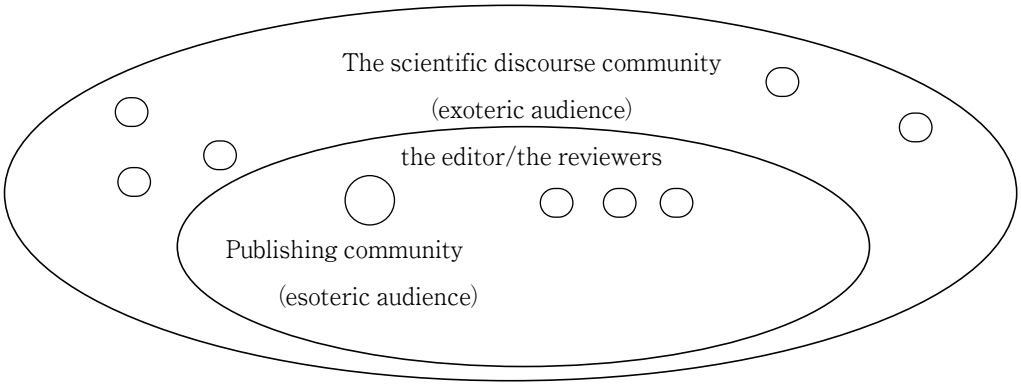
The comparison of Tables 1 and 2 reveals that although researchers seem to agree that impact factor is crucial in deciding the outlet for their work, they did not choose this indicator as a criterion for a prestigious journal. On the contrary, some researchers expressed their opposing view because impact factor may not affect all disciplines equally. For example, one research article dealing with topical issues may attract more attention than those in some esoteric discipline.

The Table 2 suggests that the researchers consider not only results of research but also those who evaluate them as criteria for a prestigious journal. Referees thus seem to play a key role in one's entering the community of active reseachers in publication, i.e. the publishing community.

As opposed to those in the whole scientific community, the number of researchers involved in publication (those in the publishing community) can be quite limited. Thus, the members of the publication community may have close mutual contact playing both a referee's and a writer's role to

maintain the quality and solidarity of the community.

The distinction between the scientific discourse community at large and the publishing community may correspond to Myers' two types of audience: exoteric and esoteric (1989), one embedded in the other as shown below.



Through publishing from one of the developing coutries, Canagarajah (1996) describes various barriers to joining the publishing community such as the lack of academic network to obtain feedback on manuscript for publication. The interaction among the members in the publishing community may not be obvious to the members in the scientific community at large. To reveal the whole picture of publication process, we need to examine how insiders interact with each other in publication.

4.3. Communication with the editor and referees.

Questions were asked about their experience with the referees' critical comments on the article and also their experience as a referee or an editor in publication process.

Their responses involved various aspects of the correspondence with the editor and their role as a referee/an editor. They were divided into four categories in relation to the topic; 1) idetification of the names of referees, 2) roles of an editor/referees, 3) experience in negotiation with the editor/referees.

4.3.1. Identification of referees.

Most of academic journals have blind refereeing system to ensure the annonymity of referees for the writer. However, researchers' responses suggest that in some fields it is possible to identify the names of referees as there are very few people who can referee the paper. This can be shown in the

following examples 3 and 4.

Example 3

British researcher B (a professor in microbiology):
the people who referee your papers are in general unknown to you now now sometimes I've seen referee's reportage being in hand written and I can recognize them from the writing because I know that there are a limited number of people who would usually edit my papers in Britain anyway—-

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Example 4

British researcher A (a senior researcher in biology):
um within our field, there are very limited number of people who would referee perhaps the sort of work we are doing so very often you could guess often from the comments that have come back—-

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As it is sometimes possible to guess the names of referees, some researchers in biology mentioned that there is a movement to identify the names of referees in some journals so that referees can sign their names on evaluation sheet which will go back to the writer.

However, the identification of the names of individual referees do not seem to have a strong influence on writing a paper as shown in Example 5. It seems to be their role rather than the names which are important to the writers, although identification of the names of the referees may have some implications later in publication process.

Example 5

British researcher A (a senior researcher in biology):
I don't think that influences the way that we write a paper—there is a move in some instances for an author to suggest referees for a paper—-but it never influences the way we prepare the paper—to know that it's going to be refereed by a particular individual—-

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4.3.2. Role of the editor/referees

The researchers' response to the roles of an editor/referees was analysed according to whether they refer to scientific discipline or social interaction with the writer. The findings suggest that the roles of an editor are to maintain 1) the expectations of a journal 2) the language in a published article socially acceptable 3) the good relationship with the writer. Their response was based on their experience in both being a writer and an editor or a refeee.

1). Maintaining journal's expectations

Concerning the paper to be accepted by the prestigious journal, the researchers' comments suggest that writers have to be aware of the expectations the editor/referees have on the journal.

One comment from a professor in microbiology expressed his awareness of the expectations when his article received rather critical comment from the referees.

Example 6

British researcher B (a professor in microbiology):
it's been many years since I've had that level of criticism and I tribute that partly to the effect of letting the PhD student write the first draft and then not being sufficiently rigourous in modifying it——what they [his students] have misjudged is the difference between the level of conciseness in—. needed between writing a thesis and writing a concise research paper—

Conciseness in writing seems to be one of the expectations in a research article.

Another expectation seems to be the role of discussion section. One researcher commented on how referees affect writing of discussion section.

Example 7

Interviewer:
so behind I mean below the formal surface—you are saying that they are wrong—

British researcher C (a senior lecturer in biology):

I'm saying that I think they might be wrong—(ok)—um but if they are right I would be very interested to see more data—(ok) um I don't know I'm wasting my time you know being that subtle— I'm sure that you know the approach to paper writing is just puts down most obvious things and doesn't bother saying anything very subtle is the best way—and the thing that drives us to put more than that is the demand from the editors and and and from referees that we write a proper discussion—you see—-

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It seems that referees and editors may be invisible in public domain but holds a key role in publication process. One Japanese professor in physics mentioned that in order to keep the reputation of a journal, the editor of a prestigious journal cannot afford to have unfair treatment of a manuscript, although some researchers also stated that these cases sometimes happen.

2). Maintaining language acceptable for public communication from the editor and referees' perspectives.

A professor in mocrobiology and a senior lecturer in biology explained that the role of the editor of a journal is somewhat similar to that of intermediary for maintaining good communication in the discourse community. They expressed their awareness of publication being public communication.

Example 9

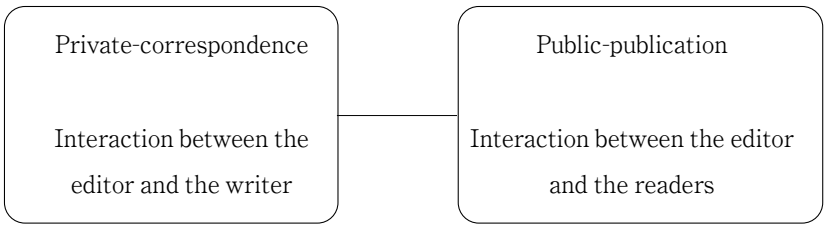
British researcher B (a professor in microbiology):
you could still be harsh then not to the sense not to the extent of being librous but because in any cases the editorial board and the publishers would not permit slanderous or librous statement to appear but criticising somebody's work or interpretations is a perfectly legitimate part of the progress of science——

Example 10

British researcher E (a senior lecturer in soil science):
—ultimately it is the responsibility the editor to make sure that really outrageous statements are not made and that probably is—there is not overtly but there is an understanding that one will be

polite—

It was shown that the editor/referees intend to draw a line between public and private communication. Publication of a research article seems to be public interaction in the discourse commuity as opposed to correspondence between the writer and the editor is private communication, which can be described as follows.



The following example represents the researchers' shared viewpoint on the distinction between private and public communication.

Example 8

British researcher D (a researcher in civil engineering):
I think if people say rude things, a reviewer ought to say about the paper but I don't think— that's sort of private between—-but I don't think you ought to say that sort of things, not publicly—-

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3). Maintaining good communication with the writer.

Politeness sometimes seems to have a place in referee's comment, which again indicates social interaction in the publishing community.

When a senior lecturer was asked about his evaluation of a paper as a referee, his response was:

Example 11

British researcher F (a senior lecturer in biology):
if you send a paper to review, invariably in my first paragraph or two—trying to pick up all the

positive parts of a piece of work and—and laying to them saying well that was good but there are number of things—you then start listing off that criticism—

He also explained the consideration he would make in writing it.

Example 12

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you [a referee] also want to know you know if you are being critical of a fellow professor— pretty high up anyway—then you know they probably defend their core probably very robust but if you know the paper was somebody who is a postgraduate and probably this is the first paper—you probably try to be more encouraging—

The above comments showed publication process is not purely negotiation between the editorial board and the writer in terms of knowledge claim. Insiders' perspective reveals humane aspect in negotiation taking the power and experience of the writer into consideration.

The same researcher indicates that the size of the publishing community sometimes forces him to consider the social aspect.

Example 13

You have to be critical—you have to just look at it objectively
but not too critical because they may be our reviewers sometime—
The guy whom you criticised may review the paper and delete any reference that you got for disagreeing with his work-

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As Becher (1989) classifies academic fields into urban and rural using the number of researchers in a field as a criterion, the size of a discourse community may have some effect on the interaction pattern in publication process. We cannot treat all the publication process of scientific disciplines as one.

So far researchers' comments suggest the importance of peer-review system in publication process, confirming that journals need to maintain their quality through reviewers and the editor. It seems necessary to identify how the writer and the editor negotiate in publication process.

4.3.3. Experience in negotiation with the editor

The researchers described the result of publication process as the results of dialogue between the writers and the editor. The word "dialogue" here can imply social and cognitive dimension for negotiating the writer's claim.

For social purpose, as seen from the referee's and the editor's perspectives, the negotiation may cover the avoidance of harsh language or unfair treatment of others' work in the writer's article. The editor needs to keep an eye on the language the wirter employs.

For cognitive dimension the British and Japanese researchers raised reasons for correspondence for negotiation such as:

1) referee's misunderstanding of the results
2) referee's request for extra experiment and statistical treatment of data for the claim
3) referee's request for citing other relevant work

For 3), it seems that most of the researchers tend to agree to include suggested work as it does not cost them any extra work. However, for 1) and 2), both British and Japanese researchers stated that they have to explain and defend their argument if they do not agree with the referees and the editor, as shown by a British senior researcher in Example 14 and a Japanese associate professor in biology in Example 15.

Example 14

British researcher A (a senior researcher in biology):
we would always try and accommodate the referees' comments—but we don't role over and accept everything that a referee says———the change depends on how confident we are in our interpretation of the results—-if we feel that our interpretation is correct, we would try and give a very robust defence—

Example 15 (English translation)

Interviewer:
What do you think of the relationship between the writer and the referee? Do you argue against?

Japanese researcher B (a associate professor in biology):
As they are refereeing, they have some power—well they know who we are but we don't know them— in that respect, we are not equal but we don't just accept everything—of course we argue if we don't agree—

One professor in microbiology, who is also the editor of an international journal, said that as an editor, he may ask the writer to tone down the claim, while he stated that as a supervisor, he would encourage his students to emphasise their results. It seems that both editor and writer have to play their roles according to their own agenda.

Since the researchers with some experience in refereeing papers understand the expectations of the editorial board, they can be well aware of both the language they can use and the degree of criticism they may expect. In other words, they acknowledge the rules of publication process as shown in Example 16.

Example 16

British researcher A (a senior researcher in biology):
I think the author is always subserviant to the referee, even if you disagree with it—it's very rare for a paper to be praised by a referee.— when it happens, you would be very pleased about it— yeah— more often there are criticisms—

However, compared to experienced researchers, novice researchers may not be ready for strong criticism. One professor in chemistry stated, "rejection doesn't upset me but upset students they think they've been insulted and they think there is no value—" Without understanding publication process, negotiation may be an impossible task. Thus it may become a supervisor's role as shown by one British researcher (professor in microbiology).

Example 17

British researcher B (a professor in microbiology):
——and then what I do like to do myself is then deal with any criticisms from the referees—if I am author on a paper whether I'm a senior author or not I like to have a major role in um answering criticisms or writing replies to referees' criticisms—

Although the writer may negotiate their claim with the editor, sometimes they may either give up negotiation (Example 18) or take the editor/referees' suggestion even if they may not be happy to do so (Example 19).

Example 18

British researcher H (a professor in chemistry):
sometimes we argue because we get very silly comments—
—we gave up several times— and sent it somewhere else—and then they publish perfectly alright—

Example 19

British researcher B (a professor in microbiology):
.——if the author is not happy about what journals are doing to his paper he has the option to withdraw it and send it to somewhere else——but young people in particular who need to get a list of publications to help their career development are often not in a strong position to withdraw a paper.

To be a full member of the publishing community, the findings seem to suggest that first researchers need to understand publication from the writer's perspective and second they need to observe it from the referee's perspective; these two perspectives will allow them to be conscious of not only journal's expectations, but also social dimention involved in publication. In other words, to be successful in publication, it is essential to understand peer-review sytem where small number of

members interact each other.

The above reasons for negotiation were raised by both British and Japanese researchers but in case of the Japanese researchers, negotiation was sometimes mixed with their language difficulties.

In order to argue in a socially acceptable way in the community, researchers are required to have language skills for negotiation, creating extra burden for non-English speakers. We need to examine what disadvantages they are aware in order to see their article in print.

5. Language problems

There are several language problems the Japanese researchers described, which can be divided into topics relating to 1) rewriting the manuscript and 2) correspondence with the editor.

First, both editors' view and writers' comments suggest that main point for rewriting is the content and clear logic in arguement which also confirms Gosden's findings (1996).

One British professor in civil engineering who is also the editor of a journal stated:

Example 20

British researcher I (a professor in civil engineering):
I think very few referees or editors go to the trouble of rewriting papers so if the paper is techincally interesting and sound then it would be probably published even if English is not standard English—its content matters so long as the paper can be understood—that's important—

Majority of Japanese researchers stated that the quality of a manuscript lies in the content supporting an editor's comment in Example 20. They stated that they are not expected to produce sophisticated literary language in discussing their work.

Thus although all the Japanese researchers agreed that they sometimes have more than one correspondence with the editor about their manuscript, language correction seems to come at the last stage of publication. They explained that it is normally the editor who may polish non-English

speakers' language as long as the content lives up to the expectations of a journal. In other words, language change can only be suggested when the manuscript is worth considering for publication.

One Japanese researcher stated that he spent as long as three months rewriting his manuscript because he knew that the editor was more or less happy with his findings and the problems were more to do with language than the content.

However, sometimes it is inevitable for language difficulties to become a major problem even if the content is worth considering for publication; one Japanese researcher (a professor in biology) explained one situation when language problems can be attributed to the acceptance of a paper.

Example 21 (English translation)

Interivewer: writing in good English is important but what you are saying is that the data matters most for publication, is that right?

Japanese researcher B (a professor in biology):
yeah if referees comment on language, it must be really bad—-data are the deciding factor on condition that you are not competing with English speakers—if you are—well then you will not have much chance— I know some of these cases—

Language seems to be a dominant factor when researchers are fighting for priority. Speed of writing may be another factor researchers need to learn in publication process.

Second, comments from the Japanese researchers suggest that letters to the editor is again time consuming work. Sometimes lack of confidence in language skills makes it difficult to be assertive.

Example 22 (English translation)

Interviewer: Have you ever given up negotiation after some correspondence with the editor?

Japanese researcher C (an associate professor in biology):
Yes, in that occasion (referring to one manuscript), I could have been more assertive—I feel I wish I

had better English writing skills—-because in order to construct strong argument to persuade the editor, we have to write really well.—don't we—-I feel it is essential to have good English writing skills for that—-

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Confidence in language skills may bring about assertive attitude which also enables writers to employ socially acceptable language. As established researchers explained that they have to defend their claim, this may be another language skill for non-English novice researchers to learn in their publication process.

6. Conclusion and implications for teaching

This study has examined the publication process and language required for publication through interviewing active researchers. Both British and Japanese researhcers agreed that publication is lengthy and time-consuming process. The findings suggest that in order to understand cognitive and social dimention in publication process, researchers need to understand peer-reviewing system which creates another exclusive discourse community within a whole scientific community. Researchers' comments confirmed interaction among the members within this exclusive community.

Active researchers' response to their experience in publication process can be summarised as follows:

1). To expect critical comments and not complimentary words in referees' comment.
2). To understand readership of a journal (they are not examiners).

3). To be able to negotiate the status of a claim with the editor.
4). To understand the negotiation as social; to be fair and polite in correspondence and manuscripts.

In coping with publication, the difficulties non-English speakers face seem not only the language for writing a research article but also the language for the correspondence with the editor. A letter to the editor may require slightly different writing skills considering the social norms of the discourse community.

To be successful in publication, therefore, writers need to master three types of knowledge: publication process, language acceptable in a research article for publication, and language for correspondence with the editor. Because novice non-English speaking writers may need to learn all of the three, writing course may need to cover these three types of knowledge in order to cope with publication.

Finally this study examined the publication process of research articles in various disciplines in science and engineering to grasp its overall picture. As academic disciplines are influenced by the type of research and its historical backgrounds (Becher, 1989), they may also have their own pattern in negotiating process. Thus it has to be noted that it may be too early to generalise my findings as the common pattern in the publication process. Further studies would be necessary to have deeper understanding of the publication process and language required for publication.

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