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Signaling devices in scientific oral presentations given by native and non-native speaker guest lecturers in international settings

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Abstract

This paper reports an investigation of the use of signaling devices by native speakers and non-native speakers to indicate the structure of text in guest lectures given in English in an international setting. It was found that lectures given by non-native speakers of English showed more examples of highly-marked signaling devices than those delivered by native speakers. This difference appeared to reflect a greater consciousness on the part of the non-native speaker of English for the need to produce a transparent monologue that could be readily interpreted by the audience. The findings of this study are of relevance to the education of novice members of the discourse community, as well as the production of teaching materials aimed at both the comprehension and delivery of academic speech. They may also have relevance for the training of presenters and lecturers in international settings such as conferences and guest lectures, as well as those involved in lecture courses at colleges and universities where the student body is made up of a large proportion of international students.

Key words: signaling devices, oral presentations, guest lectures, academic discourse, discourse markers, metadiscourse

Introduction

For people working in many academic fields around the world today, the need to be able to function in English is becoming increasingly important. This is true for a wide range of people from undergraduates, through graduate-students, right through to teaching staff and people involved in research work at universities and institutes. Until relatively recently, for a number of reasons, emphasis was placed on the ability to function in English in terms of reading and writing. This is particularly true of Japan where university English language classes have traditionally placed emphasis on the ability to read and write English, at the expense of being able to function orally/aurally. In this author's experience of teaching in higher education in Japan, it is still relatively common to encounter teaching and research staff who say that they feel confident in reading and writing English, but far less so in listening and speaking. At the same time, researchers in the field of Applied Linguistics have concentrated almost exclusively on the study of written texts when investigating scientific discourse. That this is so can be seen by the predominance of work carried out on the research article. For example, we find work focusing on politeness by Myers (98), evaluation of reporting verbs, Thomson and Ye (91),

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hedging, Salager and Myer (94), abstracts, Melander, Swales & Frederickson (98) and also article introductions, Samraj (02), as well as numerous other studies. At the same time, publishers of English language teaching books have concentrated on the development of textbooks that aim at the teaching of reading and writing skills to students in scientific fields. This has meant that textbooks devoted to developing students' ability to comprehend academic speech are few in number and limited in scope. The same goes for textbooks that aim at teaching presentation skills which, up until relatively recently, have been very few in number. In terms of research work on spoken academic English, particularly that of the genre of the scientific oral presentation, Crawford Camiciottoli (2004) points out that,

> research on spoken academic discourse still lags behind its written counterpart

This can be explained, as mentioned above, by the added prestige traditionally afforded to reading and writing. There are, of course, other practical reasons for the neglect of academic spoken discourse, notably the fact that accessing and transcribing spoken data is a complex, expensive and time-consuming activity that not all researchers in the field can readily undertake for a number of practical reasons. However, valuable research in this field has been carried out by Montgomery (1987) on the structure of university lectures, Barr (1990) on discourse intonation, Thomson (1994) on lecture introductions and cohesion in scientific lectures. Rowley-Jolivet (2002) has concentrated on visual discourse in scientific oral presentations. Mauranen (2001) considers expressions used in lectures on the Michigan Corpus of Academic Spoken English (MICASE). Jung (2005) has shown how lack of discourse markers can contribute to L2 learners' misinterpretation of a lecture. All of the above studies point to the fact that academic speech is gaining importance as a research field mainly because of the rapid internationalization of both graduate and undergraduate studies, as well as increased mobility in academic circles in the form of exchanges of staff members, guest lectures and joint research. Such research is timely and of increasing relevance, since with the above-mentioned increasing mobility and internationalization, it is important to be able to function in terms of both speaking and listening. This need is strongly stated by Webber (2005) who informs us that

> In the medical profession, besides reading, the ability to follow oral communication of research is also very important because international conferences are an essential part of the communication network within the scientific discourse community.

The study

For a number of years, I have been working on discourse markers in scientific oral presentations. These are often referred to as discourse signals or metadiscourse. The function of metadiscourse is to guide the audience through a speech event by helping them to create a mental map. In other words, lecturers inform their audience about what is about to come and how this connects to what has already been said and will be said. This, I believe, is an important field of research as it can benefit science and technology students whose mother tongue is not

English to comprehend academic lectures and eventually prepare them to move towards giving presentations themselves. Additionally, findings from studies carried out in this field are of relevance to native speakers and non-native speakers who give lectures and presentations at universities and conferences in an international setting. This is especially in terms of the raising of awareness of the importance of creating transparent presentations with clearly marked salient points, and also for the training of both novice and experienced presenters. A third use of the results of this kind of work is in the production of teaching materials that have the aim of training students to comprehend and deliver oral and poster presentations. The main aims of the present study were as follows. To investigate how organization is signaled and to ascertain the methods presenters use to make their presentations transparent. Furthermore to consider how examples of transparency can be transferred to the creation of teaching materials and the instruction of novice members of the discourse community. Since the data used in this study was derived from guest lectures given by a native speaker and also a non-native speaker, a further goal was to consider differences in lecturing styles between native and non-native speakers.

In July 2001, the author had the opportunity to collect data from a guest lecture given in English to faculty members and graduate students at Nihon University, School of Dentistry. The lecture was analyzed for signaling devices and the results reported in Langham (2002). The lecture lasted sixty minutes and was given by a native speaker of Dutch with a near-native command of English (hereafter referred to as NNS). The presenter speaks frequently at international conferences and while working in Holland spends part of the year in the United States and Japan. The presenter used a total of seventeen slides and two diagrams drawn on a whiteboard. The presenter did not provide a handout. The presentation was informal in style and was followed by a question and answer session lasting approximately ten minutes. The presentation was recorded, transcribed manually and then analyzed for signaling devices. It was concluded that the presentation displayed a large number of structural markers. Additionally, it was found that the presenter seemed to go out of his way to produce a transparent monologue that was highly marked in terms of signaling devices.

In June 2003, another guest lecture was given at the same institution by a native speaker of English (hereafter referred to as NS) who is accustomed to speaking in international settings. The field was pharmacology and many of the audience present at the lecture given in 2001 by the NNS were also present on this occasion. The opportunity to analyze the use of signaling devices in guest lectures given in an international setting by both a NS and a NNS was a very welcome one, since it allowed me to address differences as well as similarities, if any, in lecturing styles and the use of metadiscourse features. It is worth noting here the results of other studies comparing the lecturing styles of native and non-native speakers of English in international settings. Khuwaileh (1999) examined chunks, phrases and body language and their role in facilitating understanding in lectures given in English by a teacher whose first language

is Arabic and a native speaker of English at a university in Jordan. The author found significant differences in delivery. The NS was more interactive and

> used many questions which were answered partially and sometimes completely by the learners

The NNS, however, did not display the use of such question techniques. The NS also used numerous examples of the use of chunks to signal direction and boundaries

> which were of great importance to the learners as they started writing another set of notes each time the teacher used a chunk

For example, the lecturer used chunks such as the following.

> Let me turn to elasticity.

The same lecturer is reported to have made use of paraphrasing expressions such as,

> In other words
>
> What I mean by this is

The conclusion of this study is that the lecture given by the NS showed more highly marked discourse markers than used by the NNS and the frequency of use of such signaling devices aided the audience in comprehending the lecture. However, a study by Crawford Camiciottoli (2004) came up with rather differing results. In a comparison of guest lectures given by both native speakers and non-native speakers, she found that

> interactive discourse structuring was found to be most frequent among L2 guest lecturers and least frequent in L1 guest lecturers

She suggests that in comparison to native speakers, non-native speakers are more aware of potential problems an international audience may have in grasping the meaning of a lecture. The above studies provide results that are conflicting and which suggest that further investigation of differences in the strategies and lecturing styles used by NS and NNS lecturers is required.

Results

As noted in Langham (2002), the NNS speaker in this study produced a transparent monologue that was highly marked in terms of signaling devices. This can be seen quite clearly from the introduction to the lecture which was as follows:

"Today, I'd like to talk about a new concept which might be very helpful in the future for treating Parkinson's disease. I'm going to divide my talk into five main parts. In the first part, I'd like to say something about Parkinson's disease itself. What is the disease? How is it caused? And, how do we treat it today? In the second part, I'm going to explain the concept of atypical anti-Parkinson compounds. And then I'll go on to the third part to discuss the effects of a prototype. In part four, I'll consider the best animal model of Parkinson's disease, namely monkeys. In the last part, I want to focus on possible sites of action in the brain. Okay, let me start with Parkinson's disease."

First of all, the speaker introduces the topic of the presentation, which in this case is Parkinson' s disease. He uses the phrase, 'I'd like to talk about' to introduce the topic of the presentation and avoids at this stage including detailed information or technical terms. Following that, he clearly states that there will be five sections in his presentation by saying 'I'm going to divide my talk into five main parts'. At this point, the presenter starts to build a map of the presentation. The sections are introduced by using expressions such as, 'in the first part', 'in the second part', 'in part four'. Notice how the presenter effectively uses rhetorical questions to show some of the topics to be covered. The presenter uses the following three questions to help to focus the attention of the audience on the information that will follow. 'What is the disease? How is it caused? And how do we treat it today?' The presenter also uses the verb 'focus on' to emphasize the subject. Looking at the grammar used, we need to notice that the future tense is used. For example 'I'm going to'. The presenter also uses 'I'll' and 'I'd like to'. The above is an example of an effective introduction employing techniques that signal the intentions of the speaker and help the audience to create a mental map that aids comprehension. Other signaling devices used by this speaker were as follows :

Repetition : So, one of the first symptoms is tremor. So, tremor in the hands, in the limbs. You see them trembling.

Rephrasing : A second symptom is rigidity. So, stiffness in the muscles.

Simplification : Normally, the transmitters are metabolized— er broken down. In other words, if the cells die there is a disruption of the sensory input and the motor input.

Referring back : Okay, as I said. This is typical behavior.

Presenting known (given information) : And it is known that if you block the dopamine……

Highlighting : And what is important is that we measured the amount.

Rhetorical questions : So, what is SKF83 doing?

Forward movement : And I will show you that later on.

Introducing a section : So, now I would like to move on to the final part.

Skipping : I won't go into details.

Introducing visuals : In the next slide, you see again the atypical agent.

Summarizing : As you have seen, we now have animal models which allow us to pick up compounds with the same profile.

Concluding : So that is what I wanted to tell you this afternoon about the SKF compound.

In the guest lecture by the NS, we find a less detailed introduction to the lecture. When compared with that of the NNS, it is found to be not so heavily marked with signaling devices, such as division of the lecture into sections and an indication of the contents of each section. The lecture opened with the following sentence.

> I'm pleased to talk about our collaborative studies targeting gene selection on knockout mice.

However, the NS guest lecturer gave a detailed background to the study that lasted several

minutes and which effectively functioned as a prelude to the main body of the lecture. This explanation of the background was marked by the following two sentences.

The background to this work is as follows :

So this is just a background exemplification of some of the simple and less simple issues in the use knockout mice.

The use of the above sentences represents a clear attempt on the part of the lecturer to accommodate the graduate students in the group by providing sufficient background information to make the talk accessible.

Chunks have been acknowledged as playing important roles in scientific discourse, and at the same time posing difficulties for novice members of the discourse community. Chunks are defined by Nattinger (1986) as

conventional structures that occur more frequently and have more idiomatically determined meaning than language that is put together each time

The chunks, "have a look at" and "take a look at", were employed by the NS on several occasions to introduce a topic in the following way.

Let's have a look at how these knockouts are constructed in mice.

Let's take a brief look at D5 dopamine receptors.

This author's data from previous studies suggests that "have a look at" and "take a look at" are frequently used idiomatic expressions particularly in British English which are typical of the informal style frequently employed by NS presenters. The same data suggests that NNS tend not to use such informal chunks so frequently with Japanese lecturers presenting in English not using them at all. I would suggest that idiomatic chunks like these are a commonly occurring feature of academic speech, but also that they might be a source of comprehension problems for some members of the audience in an international setting. The use of "let's", as it occurs in the above two examples, is also worthy of discussion here, as it occurs several times in both sets of data. The use of "let's" indicates that the speaker includes the audience in what might be termed a joint enterprise to interpret the data. It also stresses the stance of the presenter, suggesting that there is a conscious effort to address the audience on equal terms. There are several instances of the word "here" in the data. Most of them, as you would expect, being used to introduce visuals. These are the examples.

Here, you are looking at the induction of locomotion by a drug which stimulates the D2 family of dopamine receptors.

Here are the originators.

Both sets of data showed several of the above usages of "here" mainly to introduce visuals. However, it is worth noting that in the author's analysis of presentations given in English by native speakers of Japanese, examples of the above usage of "here" were conspicuous by their absence. Instead, the phrase "this slide shows" occurred with remarkable frequency. It is possible that these presenters, as non-native speakers of English, had a much narrower range

of expressions at their disposal with which to introduce visuals. This may also be the result of idealized forms that they had encountered in textbooks. It is worth pointing out here that in a comparison of authentic presentations with scripted ones accompanying textbooks in the field of English for Academic Purposes, Thompson (2003) finds that the latter are more clearly signaled than the former with chunks of information in textbook material being smaller, all of which suggest that EAP students and novice members of the discourse community may build up unrealistic pictures of what actually happens in presentations.

It is important to be able to focus on information that the presenter considers to be of note. In other words, the ability to emphasize effectively is important. In the data, we find the chunk, "we are interested in" occurs frequently, as noted below.

> And we are interested in psychomotor behavior and orofacial movements and how they are regulated by dopamine receptor subtypes.
>
> And we are also interested in not just receptor, but in transduction mechanisms.
>
> We are interested in many aspects of motor behavior.

The above sentences suggest that the presenter sees the need to avoid a 'flat' and 'featureless' presentation. Additionally, the speaker made clear the focus of the lecture by the use of sentences such as this one.

> I'm going to concentrate on locomotion.

This sentence is to be compared with several instances in the data of "focus on" all of which have the same function. As pointed out in the sample derived from the NNS, the use of rhetorical questions in presentations is a common way of focusing the attention of the audience and also of building either an argument or content. Essentially, rhetorical questions are signaling devices within a lecture that do not generally require an answer and are most frequently used to provide information. They are commonly used devices in both sets of data in this study. On several occasions, lecturers put forward a rhetorical question and then went on to answer it themselves. Here are several examples of this, all of which show the speaker disguising what is essentially a signaling device as a question.

> What does the animal look like normally without actually challenging it with an agonist? How is the motor function in general terms? And the answer to that is that its motor function is remarkably well-preserved.
>
> The first thing that I want to say about darp-32 is that it is an easily said acronym. But what does it actually stand for? What is it?

The use of rhetorical questions helps focus the attention of the audience. This author's data suggests that this kind of signaling device is frequently used by native speakers as well as non native speakers with a good command of English. For example in a presentation on a topic in Biology, a young British presenter used this device seventeen times in total. Instances of the use of rhetorical questions in a similar corpus of presentations given in English by Japanese scientists were almost non-existent, suggesting a significant difference in style.

In terms of indicating new direction in the presentation the chunk "go on to" occurs several times and can be compared to the usage of "move on to" as found in the data derived from the NNS lecture.

I want to go on to say something about our most recent work on D4 and D5 knockouts.

Both the NS and the NNS clearly signaled points at which they omitted information. For example, the NS used the following sentence.

I'm not going to say much specifically about orofacial movements.

I have already noted the presenters' need to avoid flat or featureless presentations. In the sample, we find several examples of forward and backward movement to signal intentions as follows.

I'll discuss the physiological consequences of this in a minute.

Now, I've just described spontaneous behavior.

The NS presenter frequently introduced a new topic or indicated a shift in topic by starting with "if" and building up a series of propositions.

If you look at gender

If you look at D1 knockouts

If we look at locomotion

Conclusions in the data from the NS were highly marked, as shown below. It is worth pointing out that the NS presenter made interim conclusions at several points in the presentation that function as mini-summaries.

I'd like to finish by saying something briefly about darp-32.

So, some simple conclusions about this.

So, some conclusions about darp-32.

Conclusion

This study has considered the use of signaling devices in two guest lectures given in an international setting by a native speaker and a non native speaker. The relatively small size of the samples of academic speech used in this study make it difficult to draw any firm conclusions. I believe, however, that the patterns that have emerged in this investigation are of significance and that there can be no doubt that the way presenters use signaling devices is an important factor in creating a transparent presentation. Both lecturers made considerable efforts to guide their audiences and help them to form a mental map by the inclusion of various highly marked phrases and sentences that may be classified as metadiscourse. The NNS gave a more tightly structured discourse as evidenced by the introduction to his lecture. The NS, however, spent time giving background information to the audience. The results of this study tend to confirm those of Crawford Camiociottoli (2004) who, as reported above, found that signaling devices were more frequent in L2 lecturers and least frequent in L1 lecturers in guest lecture situations. The fact that the results obtained by Khuwaileh (1999) suggest that NS

discourse is more highly marked than that of NNS discourse is difficult to reconcile with the results of this study and that of Crawford Camiociottoli (2004). It is, however, important not to rule out the fact that, as Barr (1990) points out, most presenters receive no specific training and that some may be better than others at conveying information in a form that is easily processed by the audience. Added to which there is the problem of the idiosyncratic nature of lecturer performance and the commonly accepted fact that lecturing styles differ from culture to culture and possibly according to the field. All, or any, of these factors may explain the above conflicting results. The results of this study also suggest the importance of creating teaching materials that aid students in their attempts at both comprehending and delivering academic speech. Production of such materials highlighting easily discernible patterns in the genre might have a tendency to emphasize or even over-emphasize them. However, the main point is that such materials should help students to make the massive transition from the classroom to the real world of academic discourse. Equally, efforts to make presenters more conscious of the need to use signaling devices to aid their audiences in processing information are needed.

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