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ABSTRACT

A study of simultaneous interpretation from Japanese to English focused on problems inherent in simultaneous language processing. Data were drawn from a discussion session at an international conference of physicians concerning nuclear war. Transcription of the Japanese source text (romanized), English product, and a gloss of lexical equivalents in Japanese (all appended here) were analyzed for syntactic differences, ear-voice span, lexical use, grammar, discursial links, flow of discourse, and professional techniques for dealing with slips, errors, or unpredictable development of discourse logic. The interpreter's command of the languages and experience in translation were determined to be adequate. Problems arising in the interpretation are found in five categories (ear-voice span; lexical errors/mistakes; differences between structures in Japanese and English; sentential errors; and discursial errors) and discussed at the linguistic and sociolinguistic levels. It is concluded that Japanese/English simultaneous interpretation requires greater awareness of discursial and cultural differences between the two languages. It is suggested that further investigation into this aspect of translation be undertaken, particularly in Japanese-to-English translation, and that translator training incorporate these aspects of language processing as well as the technical elements of translation. (Contains 10 references.) (MSE)

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English/Japanese Professional Interpretation: Its Linguistic and Conceptual Problems

Luli Ishikawa

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ENGLISH/JAPANESE PROFESSIONAL INTERPRETATION: ITS LINGUISTIC AND CONCEPTUAL PROBLEMS

Luli Ishikawa (IALS)

Abstract

This paper is a study of professional simultaneous interpretation in Japanese and English based on comparative analysis of grammar and discourse. Data recorded at an international conference is analysed. The problems encountered by the interpreters, mainly due to linguistic differences between the two languages, are revealed as being also due to other factors, such as cultural differences, psychological pressure and inadequate training. It is concluded that Japanese/English simultaneous interpretation requires greater awareness of discoursal and cultural differences between the two languages.

1. Background

Japanese/English interpretation is renowned for its difficulty. Yet there appears to be no empirical linguistic study in this area. The professional problems of simultaneous interpretation are highly complex as they concern not only technical and linguistic matters but also psychological pressure or even political environment. In order to clarify the complex web of this special language use, and draw implications for better ways of learning/teaching professional interpretation, a detailed analysis of data collected in a real professional setting is desirable.

2. Definition of terms : translation versus interpretation

According to Newmark:

In general terms, translation is a cover term that comprises any method of transfer, oral and written, from writing to speech, from speech to writing, of a message from one language to another.

However, he makes the following distinction:

The term 'translation' is confined to the written, and the term 'interpretation' to the spoken language.

(Newmark 1991: 35-6)

2.1 Translation

Under the category of translation, there are many sub-categories. For example, texts are largely divided into 3 types, 'scientific-technological', 'institutional-cultural', and 'literary' (ibid.).

This is a subject-type categorisation. On the other hand, the reproduction purpose can categorise the translation types differently according to the degree of faithfulness to the original text. Any professional translator or interpreter would agree that it is crucial to represent her client's intention in the original text (source language) as faithfully as possible. This faithfulness is called the *translator's law* by Nida. The 'basic requirements' that constitute the law are as follows:

1. making sense;
2. conveying the spirit and manner of the original;
3. having a natural and easy form of expression;
4. producing a similar response.

(Nida cited in Hatim and Mason 1990:16)

The 'law' implies that 'faithfulness' concerns the author's original intention ('sense, spirit and manner') and the readers' reception ('response') and expectation ('natural, easy expression'). The mediator is the translator who operates on a continuum as below. Hatim and Mason recognise a range of translator's attitudes towards the text - 'author-oriented' and 'reader-centred' translation (ibid.) This may be expressed as a continuum:

author-oriented ← ————— → reader-centred	
<ul style="list-style-type: none"> • making sense • conveying the spirit and manner of the original 	<ul style="list-style-type: none"> • having a natural and easy form of expression • producing a similar response

In other words, the translator is responsible for the balancing of the requirements of both ends. And the balancing act will allow for variation in the end product without violating the law.

In fact, many translators and translation researchers believe modifications are necessary for the sake of loyalty to the intentions of the original text. Sager justifies modification in his article on *quality and standards of translation* as follows:

While translation is essentially concerned with the problems of interlingual transfer of messages, the practice of translation requires modifications of texts which are independent of the languages involved. It is therefore convenient to distinguish between the obligatory modifications of linguistic transfer with concomitant pragmatic changes conditioned by cultural differences and the deliberate modifications which are necessitated by a change in function of the translated text. This latter type of modification (selection, reduction, expansion of text) could theoretically be performed prior or subsequent to translation, but in practice these two processes are performed simultaneously.

(Sager 1989:92)

In any case, translators are ethically bound to operate on the text with the utmost care, in order to be faithful to the original text. Delisle's model of a 'heuristic of translation' (see Appendix 1) attempts to display the complex procedure: 'an intellectual activity located at the junction of thought, language, and reality'. According to Delisle,

Translating requires skills in four broad areas: language, general knowledge, comprehension, and re-expression... the translator must combine linguistic skill with encyclopedic knowledge of the realities comprising the physical and mental universe. One can only translate well what one knows well, and extra-linguistic knowledge is essential to understanding and reformulating message.

(Delisle 1988:109)

Therefore, when studying translation or interpretation, not only pure linguistic elements but also knowledge of the world should be taken into account. This applies to the aural-oral equivalent, interpretation.

2.2 Interpretation

Interpretation shares its fundamental principles - the translator's law and the implied complexities - with translation. However, since it is an aural/oral activity, *revision* of the end product, which is essential to achieve coherent and faithful reproduction of the original - is usually impossible. Obviously this causes further technical difficulties which we will discuss later.

Professional interpretation falls into two categories, consecutive interpretation and simultaneous interpretation.

In consecutive interpretation, each sentence is not interpreted. Instead the context or the gist is interpreted after certain segments of the original talk by the speaker. The segments can be a few sentences or even a longer unit of the discourse. The speaker stops periodically to allow the interpreter time to insert her version of what he has said.

On the other hand, in simultaneous interpretation, the two languages are synchronized. The speaker does not stop to give time for the interpretation.

2.3 General advantages and disadvantages of consecutive versus simultaneous interpretation

In consecutive interpretation the interpreter has more opportunity to digest the full meaning of the original source text and to encode his/her interpretation in well-formed sentences, as a piece of planned discourse. Thus the product can be more accurate in two respects: (i) greater fidelity to the source text; and (ii) fewer lexical and grammatical errors in the target text. A disadvantage of consecutive interpretation is that success depends on the interpreter's summarising skills: his/her ability to pick out the salient points and relate them to each other coherently. There is some risk that the final product may deviate from the speaker's intentions. The interpreter could 'misinterpret' the original in the process of reducing it to a summary.

On the other hand, simultaneous interpretation does not allow the interpreter time to digest and compose a summary of the original text. Thus the product is more likely to be closer to the development of the original discourse. And most of all, it is time-efficient, which is one of the main reasons why simultaneous interpretation is ousting the consecutive at international conferences. But this time factor is also the greatest cause of technical and psychological pressure on the interpreter. The interpreter is virtually groping for what comes next in the logical development of the original discourse. If the pressure is too high, more errors, mistakes or slips can occur.

	ADVANTAGE	DISADVANTAGE
CONSECUTIVE	More time available for interpretation	Time-consuming
SIMULTANEOUS	Time-efficient	Interpreter may lose track (because of the unpredictability)

The above are from the point of view of the interpreter. But there is another, most important, aspect of interpretation, which is intelligibility to the audience. From the audience's point of view, simultaneous interpretation may sound not only more efficient but also more comprehensible, because we imagine a fluent discourse with a natural flow. On the other hand, one might assume that consecutive interpretation is rather distracting because of its interrupted discourse.

Is this true? We will find out using actual data of simultaneous interpretation sampled at an international conference. But first, we will look into the details of skills involved in simultaneous interpretation.

3. Simultaneous interpretation

3.1 Types of simultaneous interpretation and their technical problems

Our first concern is the technical nature of simultaneous interpretation in general. We will clarify the character of this activity, then discuss its particular technical difficulties both for the interpreter and the audience.

Within simultaneous interpretation, there are various types of operation. For example, for a business negotiation, 'whispering' is often used, and at a large international conference a pair of interpreters for each language may go into a booth with headphones on. They usually take turns. One can help the other by giving notes while s/he is performing. The interpretation product will reach the audience via microphone and earphone.

There is also another means of categorization according to the amount of preparation and rehearsal done by the speaker and his/her interpreter. This is called 'briefing'.

Usually, in Japan at least, the simultaneous interpreter is given some information about the spoken text which s/he is going to interpret. Prior to the actual speech, the speaker is supposed to give copies of the lecture, or at least some memos, to the simultaneous interpreter. Ideally the simultaneous interpreter and the speaker will have a discussion on the content and how to interpret it. For broadcasting, a simultaneous interpreter may listen to the tape at least a few times in order to get the gist and take some notes. This thorough preparation is crucial for a satisfactory interpretation.

But the other type of interpretation is absolutely spontaneous. This is generally perceived as the most demanding interpretation of all. The greater unpredictability plays havoc with the preservation of the original discourse. The pressure on the simultaneous interpreter is described by Glemet as follows:

As you are following the speaker you start a sentence. But as you start a sentence you are taking a step in the dark, you are mortgaging your grammatical future: the original sentence may suddenly be turned in such a way that your translation of its end cannot easily be reconciled with your translation of its start.

(Glemet in Gerver 1976:168)

Since it is a synchronized performance of the speaker and the interpreter, the interpreting end-product heavily depends on the speaker/interpreter relationship. Robinson says:

The interpreter may have a good feeling about one speaker, may feel that he or she is eminently predictable... Another speaker is different; ...even before he or she begins to speak the interpreter knows there is going to be trouble... words come out in a sudden flood of almost incoherent verbiage, which then stops while the speaker digs ferociously at an ear, giving the interpreter time to catch up, of course, but along with the time a case of the heebie-jeebies. The easiest speaker to follow may also be the most boring, so that the interpreter finds it hard to stay alert.

(Robinson 1991: 28-9)

3.2 Scientific analysis of simultaneous interpretation

The above is of course a subjective analysis of the technical difficulties of simultaneous interpretation. However, this clearly suggests the psychological pressure on the interpreter during her performance.

More scientific analysis has been done based upon a theory of 'ear-voice span', *the amount of time a interpreter takes according to the textual difficulty*.

Gerver found that 'the optimal input rate for simultaneous interpretation was between 95 and 120 words per minute' (Gerver 1976:172-73). And this has had a practical effect for professional interpreters. For example Hara, a Japanese-English interpreter, says in her guide book for interpreters:

Prior to the lecture at briefing, it is advisable to ask your speaker to read his paper at a speed of 2 to 3 minutes per 230 words. (Hara 1994:42)

So it is clear that there is a strong correlation between the speed of input and interpreters' performance.

What we are concerned with in this paper is the correlation between the linguistic or conceptual items in the text and the interpreter's performance. Since it is impossible to separate the time factor and the content factor, the data is designed to show both. When a problem is identified, it will be looked at from both points of view: possible time factor and possible linguistic or conceptual factors.

In order to reduce the amount of culture-specific variables, highly technical scientific texts are preferred. Newmark says that the more technical and specialized the text is, the less culture-specific knowledge it requires. (Newmark 1991)

4. Data

The setting was an international conference of an organization called IPPNW¹ (International Physicians for Prevention of Nuclear War) in Hiroshima, Japan in 1989. This data was collected during free discussion and questions following a panel discussion on 'Chemical and Biological Weapons and IPPNW.'

The data was originally audio-recorded, then transcribed on a graph paper as shown in Appendix 2. Every 0.5 second was marked on the graph paper. Underneath are three lines:

- Line 1: the original speech transcribed with romanization of the Japanese sounds.
- Line 2: a gloss giving the lexical equivalents in the source language (speaker's language).
- Line 3: the interpreter's product.

A comparison of lines 1 and 2 with line 3 shows syntactic differences and ear-voice span.

The data was also transcribed as in Appendices 3 and 4. The flat transcription of the interpreter's performance in English (Appendix 4) is designed to highlight the contents of the discourse - lexical use, grammar, discoursal links, the flow of discourse, as well as the professional techniques, for example, how s/he deals with slips, errors, mistakes or unpredictable development of the logic of the discourse.

¹Ear-voice span: '... when the input language is straightforward, the interpreter will be a regular 2 or 3 seconds behind the speaker. But when an unexpected textual difficulty emerges, or the speaker suddenly speeds up, the delay may increase, with a consequential 'knock-on' effect that may take some time to resolve. During this period, when the ear-voice span is several seconds long, the interpreter's cognitive linguistic processing abilities are under great pressure.' (Crystal 1987:349)

²IPPNW (International Physicians Prevention of Nuclear War) was founded in 1980, led by two prominent cardiologists, Dr. Evgueni Chazov of the (former) USSR Cardiological Institute and Dr. Bernard Lown of Harvard School of Public Health. Physicians from the former Soviet Union and the USA held the first meeting from which the international organisation, consisting of 20,000 physicians, and scientists in various fields from more than 80 countries, emerged. Their aims are: to inform and educate the public world-wide about the medical and scientific consequences of nuclear war; and to demonstrate the value of cross-national cooperation on medical and scientific researches for the prevention of man-made catastrophes. Issues dealt with range from medicine chemical-biological science to social welfare, human rights and politics. IPPNW was awarded the Nobel Prize in 1985 for 'considerable service to mankind by spreading authoritative information and by creating an awareness of the catastrophic consequences of atomic warfare.'

In addition, a tentative ideal translation is given of the Japanese original. The definition of an ideal interpretation is itself uncertain of course; but this might be called an example of an interpretation which is as close as possible to the original in the sense that it follows the logical development of the discourse step-by-step using each lexical equivalents. This will give some idea to non-Japanese speakers of how the original Japanese speech is composed. And it will later be used for a discussion of cultural variation of 'logic' in discourse.

5. Analysis

5.1 General view

The transcriptions show that the discourse of the interpreted text is full of hesitations, pauses, and paraphrasing. There is also significant topic shift (from the speaker's personal experience to his protest against American government's new scientific project).

Because of these factors, the product is, to some extent, distracting to the audience contradicting our initial assumptions about simultaneous interpretation. The data given in Appendix 2 include signs of non-fluent discourse such as:

1. long pause (a long period of silence in the middle of a speech makes the audience nervous);
2. interpreter's voice shaking or suddenly changing pitch;
3. interpreter's sighs, hesitation noises etc.

Interpretation problems due to the interpreter's poor command of the languages or lack of experience

One might wonder whether this interpreter can speak good English, or understand Japanese. When an interpreter makes mistakes, her command of languages is questioned whether justifiably or not. Should the problems here be attributed to the interpreter's poor command of the languages?

Actually, the interpreter in question is claimed to have an outstanding command of English (at least TOEFL 630 or TOEIC 860) even before she took up this occupation. Of course results of English proficiency tests do not necessarily guarantee her native-like command of English, yet unless proficiency tests like TOEFL are totally valueless, we should give the interpreter some credit for her command of English.

→ ❶ **Command of the target language (English) is not inadequate.**

Then the next question is her command of Japanese. We know that she is a native speaker and judging from her background and normal conversation, she has an excellent command of Japanese (I met this interpreter at work, and she does speak sophisticated Japanese).

→ ❷ **Command of the source language (Japanese) is not inadequate.**

What about her work experience? Apparently, she has considerable experience in interpreting for international conferences.

→ ❸ **The interpreter does not lack experience.**

On these facts, a possible explanation of the problems of the interpretation - the interpreter's command of languages is poor - is rejected.

Interpretation problems due to the original speaker's poor performance.

The next question is whether the original speaker's speech was poorly intelligible. It is hard to define intelligibility in an objective sense. Although it may not have been easily comprehended by the interpreter, it could still have been a perfect speech for the audience, or vice versa. This argument involves individual variables, so the quality of the original speech will be examined only in the most general way: how the audience responded to it.

In this case, the speech was generally accepted by the Japanese audience without any obvious linguistic problem. Probably it is fair to say the original speech was perfectly acceptable. If not an excellent speech that would appeal to an international audience, it is still a typical Japanese speech of the kind. The main cause of the interpretation problems does not appear to be a fault in the original speech.

Then, is the cause of this unintelligibility dependent on the nature of simultaneous interpretation?

5.2 Points to be identified in the analysis of the data

Let us refer to the transcript of the performance (see Appendix 2). As we said, the first line shows the original speech by the Japanese physiologist. The second line is a word-for-word translation inserted to show the word order in the Japanese original. The third line is the actual interpretation. The numbers on the graph above the first lines show every second of time. Thus, the graph shows us the ear-voice span. On this graph, we can identify the following points:

1. Ear-voice span
2. Lexical errors/mistakes (equivalent word, connotation etc.)
3. Differences between structures in Japanese/English
4. Sentential errors/mistakes (e.g. agglutinating vs inflecting language, tense, etc.)
5. Discoursal errors/mistakes (e.g. conjunctions, references, logical development, etc.)

The ear-voice span will not only mark technical difficulties, but also suggest the cause of the difficulties that the interpreter might have had at each particular time.

5.3 Linguistic and sociolinguistic problems

At the lexical level, quite surprisingly for a near-native speaker of English, there are numerous errors and mistakes in the performance. There are problems with articles, prepositions, which are typical of a native speaker of Japanese, and confusion of similar words like 'contrary to our consciousness... conscience... ness'. And there are more stylistic problems. Also there are many words which were not interpreted at all.

However, as far as intelligibility is concerned, seemingly it is not only the words that affect the comprehension.

The most obvious cause of the problems at sentential level is the difference between Japanese, an SOV language, and English which is SVO. The difference in word order means delay in ear-voice span. It is a well-known fact that Japanese into English and German subordinate clauses are one of the most problematic areas for simultaneous interpretation, as is pointed out by Crystal. (Crystal 1987:349)

Another problem at the structural level is, as we expected, that of tense/aspect.

Two main reasons come to mind :

1. Japanese verbs appear at the very end of long sentence with lengthy insertions. Thus in English interpretation, the interpreter has to predict what time reference the speaker is going to use.

2. Japanese time reference is more aspectual - i.e. perfective and imperfective - than English. In other words, the concept of 'time' is not identical.

Next come the problems at discoursal level. This is an analysis which looks at the data as a whole text. For example, combination of sentences, referential markers to previous sentences or paragraph, and logical development (coherence) are studied.

In the audio-recorded data, the speech sounds rather incoherent towards the end, especially when the topic shifted from the physiologist's experience to a protest against Japan's development of chemical/biological weapons seemingly under political pressure from the USA.

According to the ear-voice span, there is a significant delay at this point of 118-128 sec. Here, the unit; 'Solewasoletoshite-soshite seibutsu heiki' is poorly interpreted in 129.5 -134 seconds.

It was as late as 129 sec. when the interpreter started. By the time she started the interpretation with a conjunction 'solewasoletoshite' (roughly meaning, 'that-is-that'), the original speaker had moved onto the next topic, a news broadcast about America's political pressure on Japan to develop chemical and biological weapons. This delay seems to have been caused by two factors.

1. A knock-on effect from the previous topic - the physiologist's own experience of rejection of his superior's order to conduct inhuman research for military purposes.
2. The conjunction 'solewasoletoshite' marks a change of topic. Normally it is translated as 'by the way'. The interpreter may have chosen to wait until the new topic was clear to her.

Also within 119-127 sec., the interpreter spends 2.5 seconds on hesitation noise ('err'). Here, her interpretation is clearly disturbed. This disturbance occurs while she is closing the previous topic to move onto the next. This fact reinforces our impression that there is a cause of linguistic difficulty related to the conjunction. The conjunction 'solewasoletoshite' actually is a combination of 5 words.

5.4 Choice of demonstratives

Japanese	Sole	wa	sole	to	shite
English equivalent	that	is	that	as	do (make)
Grammar	<i>demonstrative</i> anaphoric ref.	particle topic mrkr	<i>demonstrative</i> anph.ref.	particle (Aux.Vb 'tali') statement mrkr	'Verb 'suru' + Aux.'ta' [in imperative mood] make (perfective)
	that	is	that-as-(it)-remains-(so)		

⇒ **That's that; By the way; So much for that, etc. (common translation)**

But this has a culturally specific meaning behind it which is:

⇒ **that (what has been said previously) is made to exist there as is**

➔ **Bearing this in mind (conceptual translation)**

- **Referential problem**

The demonstrative 'that' which acts as a conjunction here in Japanese actually marks an anaphoric reference. Altogether, it means, 'Let us make the previous topic remain there as it is' in Japanese. And the discursual connotation is 'Bearing this in mind'. Therefore, a better translation of this topic-shift conjunction would be:

'..... that was my own experience of scientific research for military use. Now, bearing this in mind,

In this way, the cumbersome topic shift in English is erased as follows,

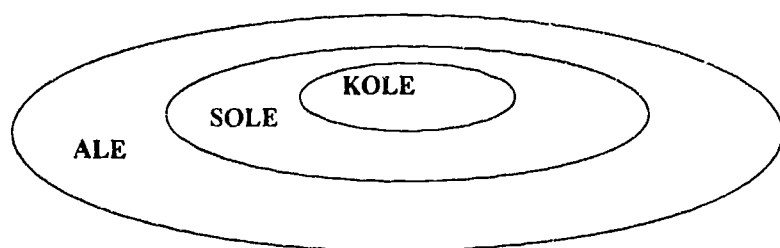
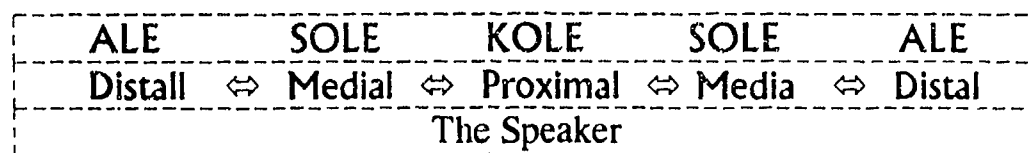
'... I rejected my senior's order. That was my own experience of scientific research for military use. Now, bearing this in mind, what concerns me recently is the following topic - the recent project on the development of chemical/biological weapons....'

- **Deixis illuminating cultural mind**

Coming back to the 'that' in Japanese (the demonstrative KOLE), we can find another culturally bound linguistic cause for the interpretation problem.

KOLE is one of three Japanese spatial deictic items.

Morphemes KO, SO, A indicate distance between the speaker and the entity referred to. The entity can either be concrete or abstract as above. The diagram below shows the idea.

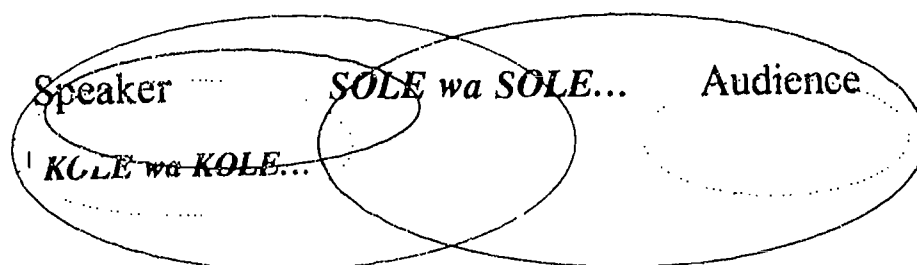


These deictic items are subjective to the speaker's judgment of physical and psychological distance between the speaker him/herself and the thing or notion (either concrete or abstract) referred to.

Therefore, which distance indicator the speaker uses implies the speaker's attitude towards the thing referred to. For example, if the speaker is talking about something abstract, the closer the spatial deixis the speaker used, the more relevant the referred item is, to what he is talking about in his discourse. In other words, when this **deixis-wa-deixis-to-shite** is used as a discursual linker, the speaker can indicate his view of how closely related are the passage he has just finished and the next passage he will produce - how relevant the two passages he uttered are to each other.

Also, the deictic items indicate the speaker's recognition of the closeness to his audience. In the three-step distance marking system, KOLE is exclusive to the speaker. SOLE is more inviting to the audience - sharing an entity somewhere between the speaker and the audience. ALE is away from both the speaker and the audience.

ALE wa ALE



ALE wa ALE

1. The speaker's chooses a demonstrative as referential item to show his view about the degree of relevance of the topic to the previous topic.
2. Each choice of a demonstrative indicates the speaker's expectation of the degree of speaker-audience involvement (i.e. sharing an entity, which is the idea that the speaker has previously talked about - protesting against superior's inhuman order even risking his life.)

KOLE

I am actually a physiologist + Kole-wa-kole-to-shite + I am protesting against America's new chemical weapon..

= I am primarily a physiologist, *but at the same time/ it's my business*, I am protesting against America's chemical weapon.

SOLE

I am actually a physiologist + Sole-wa-sole-to-shite + I am protesting against America's new chemical weapon..

= My occupation is physiology (and as **you* may imagine, I care about human health), bearing this in mind, I'm protesting against America's chemical weapon.

* inclusive. invitation to the audience's empathy.

ALE

I am .ctually a physiologist + Ale-wa-ale-to-shite + I am protesting against America's new chemical weapon..

= Yes, it's true that I am a physiologist, but that's irrelevant, I am protesting against America's new chemical weapon.

[This distancing indicator suggests that probably he is doing something that a physiologist is not normally associated with..... He might be actively protesting against America's new chemical weapon...]

Spatial Deixis	meaning	Relevance degree	Audience Involvement
1. Kōle-wa-Kōle-to-shite	As this fact remains here...	Proximation Highly relevant	Exclusive (only concerns S)
2. Sole-wa-Sole-to-shite	(So much for that but) Bearing this in mind...	Mediation (although the topic changes in fact it is still) Relevant	Inclusive (Concerns both S & A)
3. Ale-wa-Ale-to-shite	Be that as it may.... but it's irrelevant...	Distancing Irrelevant	Distant from both the speaker and the audience

5.5 Sociolinguistic factors

The above interpretation may still leave us slightly confused. The two things, the speaker's own experience and the scientific project of the Japanese Self-Defense Force, do not appear to be directly relevant to each other.

Relevance is, to some extent, a culturally biased matter. Successful speech is convincing. It is convincing because it is in line with the listener's expectations of an acceptable logical development, a succession of relevant discourse. Relevance presupposes the following considerations shared between the people engaged in the verbal communication.

1. what to say
2. how much to say
3. how (in what fashion) to say it

Grice called these rules the 'cooperative principle' which he reduced to the following four maxims;

1. The maxim of quality
2. The maxim of quantity
3. The maxim of relevance
4. The maxim of manner

According to Grice, these maxims make for a successful verbal communication. However, the problem is, recent research in discourse and relevance suggest that the operation of these maxims varies from culture to culture. For example, in the original Japanese speech, the physiologist's personal experience in rejecting his superior's inhuman order displays his moral excellence, therefore his protest against the recent research must be accepted and appreciated by the audience. Although this sounds far-fetched, it can be explained by Japanese social codes. Total obedience towards one's senior is an unwritten law, yet his obligations and conscience led him to risk his life to protest against the senior's order. This fact is most appealing to the Japanese mind. It satisfies the norm of the virtue, the way of a 'pure and straight - holy' life. Particularly the fact that he had almost sacrificed his life for the sake of other lives is expected to stir up deep empathy in Japanese minds, creating closeness between the speaker and the audience. And the closeness rejects further explanation about why the speaker brought up the topic of the recent chemical/biological weapons. It likewise rejects any close examination of his views on the topic.

It is important to re-emphasize this deliberate creation of 'closeness' from the grammatical aspect. Notice the conjunction SOLE-WA-SOLE-TO-SHITE falls into the medial category of the Japanese three-way spatial demonstratives.

This cultural/social and conceptual aspect of discourse makes the interpretation highly complex. Needless to say, it is almost impossible to perform simultaneous interpretation when it comes to conceptual differences.

6 Conclusion

As we have seen briefly, interpretation involves not only technical and linguistic difficulties but also conceptual problems. Yet, the current education system for interpreters in Japan does not emphasize this aspect. Rather an enormous amount of time and effort is spent on technical aspects such as memorizing useful expressions, and so on.

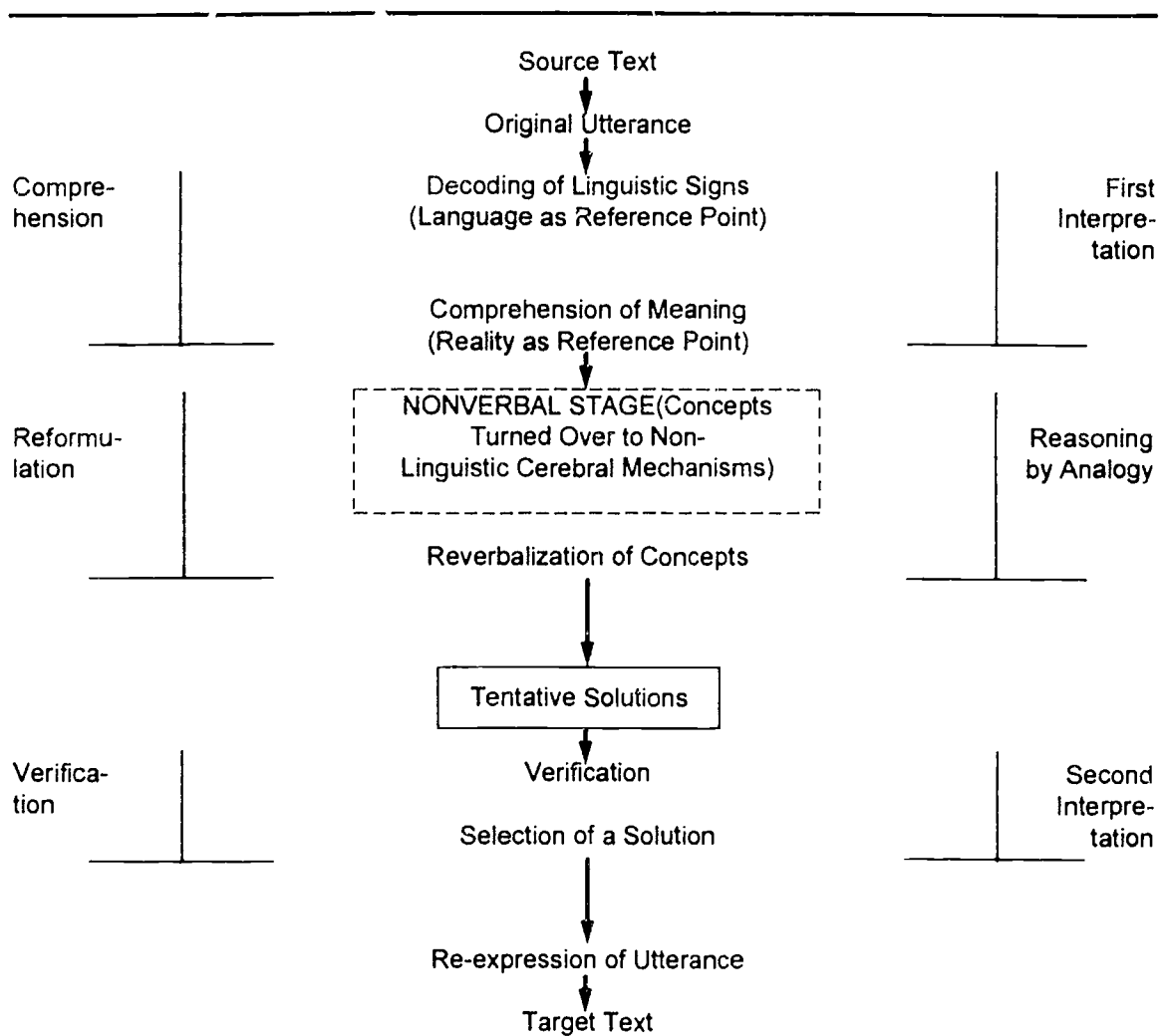
The data suggests that the main problems are the conceptual aspects within and behind the linguistic items. Investigation into this area at various linguistic levels, morphological, structural, discursal, sociological etc., may illuminate code-switching between Japanese and English, in which more efficient and accurate ways of interpretation may be sought.

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Appendix 1
Delisle's model of *Heuristics of Translation*

Figure 4
Heuristics of Translation



(Delisle 1988: 69)

- ① Ah (during throat) Wamashina, E, Nihon, E, Nihonno Fukushima to yu machi no deigaku himegata no meisho...
I Japan Japan's Fukushima So-called town of university for long while back...
Well Let me introduce myself I am actually I had
- ② deatte igakucha, Wamashinosenmonna, Fijioroji, Seirigaku, nandesuga Wamashinawano chini, Daijijikaisenchu ni, Pekinongakko ni...
as well as researcher my specialty physiology physiology-be but I war-during WWII during Beijing Univ. teacher
barracking for university in Fukushima, and I was, I am a physician, especially I do a physiologist I myself, during the second world war
- ③ tekini, gunrainishushote, P. J. I. bitai noshibutai, Pekin noshibutai no nakade Wamashinai jintaijiken chomei zairen no keshi ni...
when army drafted be P. J. I. unit of division Beijing division of inside I human experiment order be order to be
I was drafted into the army, and I work I joined to the division seven three one and I went to Beijing
- ④ Wamokushino kentyu washi chonokentyu deshitanoe, butaido to yu johan ni, ningennohatani Fukusaho, Abdominari, Budo...
(I, cf) research, small intestine, so C.O. so-called Senior by human abdomen Abdominal Window Abdominal Irradiation
and I had do some human experiments in Beijing University. I was instructed by my subordinate to do the following operations
- ⑤ tsukutte soshite sore o kantsujuso, hohajude motte kantsujusoshite, chononariyo ga, Sotohidenaiyoni, Sutsuniwa, ikanaru kusu...
make land then that shoot through rifle with shot through intestine-contest, outside connect do hot do what kind medicine use...
tions Abdominal or operation have to be done, and we penetrated the abdominal space or. In order for when the abdominal
- ⑥ yu meireio ukemashite, akiratahisorawa, chugokujinno horyo, aruiwa gaikokujinno horyo osakate joroshi byu meirei de irimashite keredomo, Sorewa kutsuchiwa...
such order receive clearly that be Chinese captive or foreign captive used allow such order (believe) however, that I
was penetrated, and not the internal organs of abdomen be exposed to the outside. What we could do prevent from the internal organs to expose to the outside. That was the objective.

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Appendix 3

Data (A flat transcription of the original Japanese speech in Roman script.)

Ah, (clearing throat) Watakushiwa, Eh, Nihon, Eh, Nihon no Fukushima to yu machi no daigaku ni nagaku tsutomete otta isha deatte igakusha. Watashino senmon wa, Fijiorojii, Seirigaku nandesu ga Watakushi wa senso-chu ni, Dainiji-sekai-taisen chu ni, Pekin-daigaku no sensei no toki ni, guntai ni shoshu salete 7.3.1-butai no shibutai, Pekin no shibutai no nakade Watakushi wa jintai-jikken o meizelaleta taiken ga alimasu.

Watakushi no kenkyu wa shocho no kenkyu deshita node, butaicho to yu joku ni, ningen no hala ni Fukusoho, Abudominaru-Bindo o tsukutte soshite sole o kantsujuso, hoheiju de motte kantsujuso shite, cho no naiyo ga soto ni denai yo ni suru niwa ikanaru kusuli o tsukaeba yoi ka to yu, meilei o ukemashite, akilakani sole wa, chugokujin no holyo, aluiwa, gaikokujin no holyo o tsukatte yoloshii to yu meilei de alimashita keledomo, sole wa, watakushi wa, ningen no inochi o sokonau kikenisei de alu dokolo ka, akilaka ni koloshite mo yoi to yu jitai de alimashita node, Watakushi wa gakusei-jidai, aluiwa, jibun no taiken kala, ningen o hito ga, hito o, koloshite wa ikan, aluiwa kolosukoto ni chishiki o kashite wa ikan to yu, nisen-gohyaku-nen mae no Hipokulatesu no chikai o moto ni shite, Watakushi wa joku no meilei o kyohi shita taiken ga alimasu.

Sole-wa-sole-to-shite, ima, watashi ga ima shinpai shite imasu no wa, minasan no kakuheiki, soshite seibutsu-heiki ga, ima, Nihon ga sole o yalo to shite illu to yu koto desu.

Sakunen no shogatsu, NHK de Nihon no Boeicho wa, Boeicho no naka ni kagaku-heiki bogyoi, bogyoi o Boeicho no jietai no taiin ni zenbu haikyuu suru.

Soshite boeicho no naka ni kagaku-heiki ni kansulu alui wa seibutsu-heiki ni kansulu kenkyu o hajimeru yohodo ga nasale mashita.

Watakushi wa, konnna joutai wa, Nihon no lekishi, sekai no lekishi ni gyakko sulu mono to omoimasu keledomo, zannen nagala, sono jijitsu wa, shinko shite ilu yo de alimasu.

Danjo no minasama, ittai, Amerika wa, naze, Nihon ni iloilo no soyu kagaku-heiki shotai, osolaku Amerika no kibo ni yotte soyu mondai ga dete ilu to omoimasu keledomo, Amerika no sensei-tachi, Naze, soyu koto o Amerika wa sulu ka to yu koto o hakkili minasan no ho kala, Amerika no seifu, Amerika no gunbu ni, hantai-iken o tsuyoku dashite itadaki tai.

Watakushi wa shitsumon to yu yoli onegai o moshi agete, watakushi no komento o owalimasu.

Appendix 4

Data (A flat transcription of the interpreter's product)

Well... let me introduce myself, I am... actually I had been working for University in Fukushima, and I was, I ... am a physician, especially I would say a physiologist.... I myself, during the second world war, ... I was drafted into the army..., and I wor..., I joined to the division 731, and I was sent to Beijin, and I had to do some human experiments in Beijing University.... I was instructed by my subordinate to do the following operation... Abdominal... er, er, operation have to be done, and we penetrated the abdominal space, err, in order for when the abdomen be exposed to the outside. What we could do to prevent from the internal organs to expose to the outside. That was the objective of the er, sur, er, surgery. And we had to employ the captive, as a subject of the operations. In those days I felt, that... that was err, quite contrary to our consciousness... er, conscience...ness, and err, I had err, dead... dread experience. I firmly believed that we had no rights to kill the err, people, nor the knowledge be accumulated, err... to the extent that accumulated technology could assist the killing of other people. I actually er, rejected the order by the err, subordinate in the army, err, to do the operation at Beijing University. Now we are talking about chemical and biological weapons. The country of Japan is almost start the development researches in those areas. Last year, Japanese Self Defense Agency of the Japanese government, ... the TB anounced, (sigh for 2 sec.) the Self Defense Agency is going to provide a protective clothing for the Self Defense Army..., for any... err, defence purposes against the chemical weapons. And the Self Defense Agency according to the reporter, err, was going to start researches err, in the area of the err, chemical weapons in the name of the defence. I believe that if that decision was correct, that it was the decision is against the sentiment of the people at this present time. I wonder, why the United States.... (sigh in the middle of this 0 sec. of silence).

Err, I believe that if there are, were any request from the United States for the Japanese government, err, to conduct such kind of researches. I really wish that scientists and researchers, from the United States, to protects, pro, pro, protest, err, against any, err, threat or thrust of the United States government of the army for Japan to conduct such kind of researches, if the information was correct. Thank you Mr.chair... Madam chairman.

Appendix 5

Data (an 'ideal' interpretation close to the original word order in Japanese)

* words in [] are inserted for the sake of coherence.

Well, let me introduce myself. In Fukushima in Japan there is a university at which I worked for a long time as a doctor as well as a scientist.

My speciality is physiology - Seiligaku in Japanese.

During the war - World War 2 - , when I was a lecturer at Beijing University, I was drafted into the army, and was in a division of 731 unit - that was the Beijing division, I was given an order to experiment on living bodies.

My research was on the small intestine, so the Officer Commanding - my senior - gave me an order. [The experiment was as follows.]

Inside human abdomens, an abdominal window was to be made, and then this was to be shot through with a rifle. Then the contents of the intestine were to be examined. How we could prevent the intestine from coming out even when the abdomen was shot through [was the question], and what sort of medicine would be best for this purpose. This was the research objective ordered.

Obviously it meant that Chinese captives or other foreign captives were to be used for the experiment. And that was the command.

However, that was, I thought, an operation that endangered human life. Also it evidently accepted killing humans for research.

So.... my time at university and my own experience in life made me think that one man must not kill another, and one must not lend one's knowledge to support murder - which was the 2,500 year old Hippocratic oath. On the basis of this oath, I rejected my senior's order. [So much for my experience.]

Well, bearing this in mind, now, what worries me is the chemical weapons and the biological weapons which now Japan has begun to take up.

On New Year's day two years ago, NHK, the Japanese Broadcasting Corporation, reported that the Japanese Defense Agency had decided that in the Agency, chemical weapon protective clothing would be distributed to all members of the Self Defense Forces.

And inside the Defense Agency, chemical or biological weapon research would be begun.

In my view, the news was going against Japanese history, and World history [since WW2].

However, regrettably this situation is still seemingly [worsening].

Ladies and gentlemen on the panel, I wonder, why the United States, in its relationship with Japan....[is introducing] such various chemical weapons to Japan.

Probably at America's request, such issues have been raised.

But ladies and gentlemen from the United States, why does the American government put pressure on the Japanese government in this matter?

[This is what] I would like you to question the American government and its army [about].

And I wish that you would strongly protest to the government of the U.S.A. and its army on this matter.

I shall make this plea rather than a question as my comment on this session.

Thank you.