

# Inferencing Tasks as a Process-Oriented Approach to Second Language Acquisition

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## Abstract

This paper addresses inferencing tasks derived from interpreter training techniques (ITT). ITT have drawn much attention due to their applicability to second language acquisition (SLA). The paper starts with a review of major ITT and some concepts of SLA including communication strategies (CS) and consciousness raising. It then discusses features of some ITT which are considered effective in the course of taking a "process-oriented" approach. A neurolinguistic explanation is employed to illustrate that mental "flash or spark" and "association" are facilitated through the tasks.

## 1. Introduction

It is a recent phenomenon in Japan that interpreter training has gained much attention from researchers and practitioners for its enhancement of language proficiency (Someya 1996; Torikai 1997). This is because learners successfully achieved language development regardless of whether they actually became professional interpreters or not. Hiramatsu (1997, 1998a) did research into this field to demonstrate the applicability and potentiality of ITT toward SLA. Hiramatsu (1997) looked into how CS and ITT might be interrelated, and found out that they are closely intertwined with each other. Hiramatsu (1998a) placed greater emphasis on detailed analysis and explanation of major ITT and their applicability to SLA. The latter study took up two techniques as far as inferencing is concerned: "acronym guessing" and "morphological guessing." The term "guessing" is used instead of the academic term "inferencing" with an aim to familiarize learners with the techniques. In this paper too, actual names of inferencing tasks are expressed with the word "guessing".

## 2. Research Background

I would like to start with ITT, then go on to some concepts of SLA including CS and consciousness raising.

### 2.1. Interpreter training techniques (ITT)

I have developed the following taxonomy of ITT, which consists of a restructuring of conventional classifications and an addition of newly devised techniques. Some techniques overlap with those in SLA.

Table 1. Taxonomy of ITT by Hiramatsu

1. quick response
Word or phrase-level conversion between the source and the target languages.
2. shadowing
To perform listening and speaking simultaneously without language conversion.
3. repeating
Sentence-level repeating during a pause after the original utterance.
4. reproduction
Discoursal-level "repeating" as reproduced by the unit of paragraphs.
5. note-taking
To take notes while listening in order to retain precise information.
6. paraphrasing
To express meanings in various ways.
7. sight translation
To translate orally while seeing the script.
8. acronym guessing
To inference the original words from acronyms.
9. morphological guessing
To inference meanings by considering morphemes.
10. note-guessing
To inference the intended meaning of notes by contrasting them with the original text.
11. phonological guessing
To inference syntactically or contextually unknown words through phonological cues.
12. predictive guessing
To inference what will be uttered next.

13. sense group reading (*or* listening)

To comprehend the message by the unit of sense groups.

14. slash reading

To clearly mark sense groups through slashes to facilitate the above 13.

15. description

To explain pictures, situations, etc. in detail.

16. narration

To describe an event in sequence.

17. logic analysis

To analyze the logical flow of the text.

18. summarization

To give the main points of the text.

19. dictation

To write down what one listens to.

20. delivery

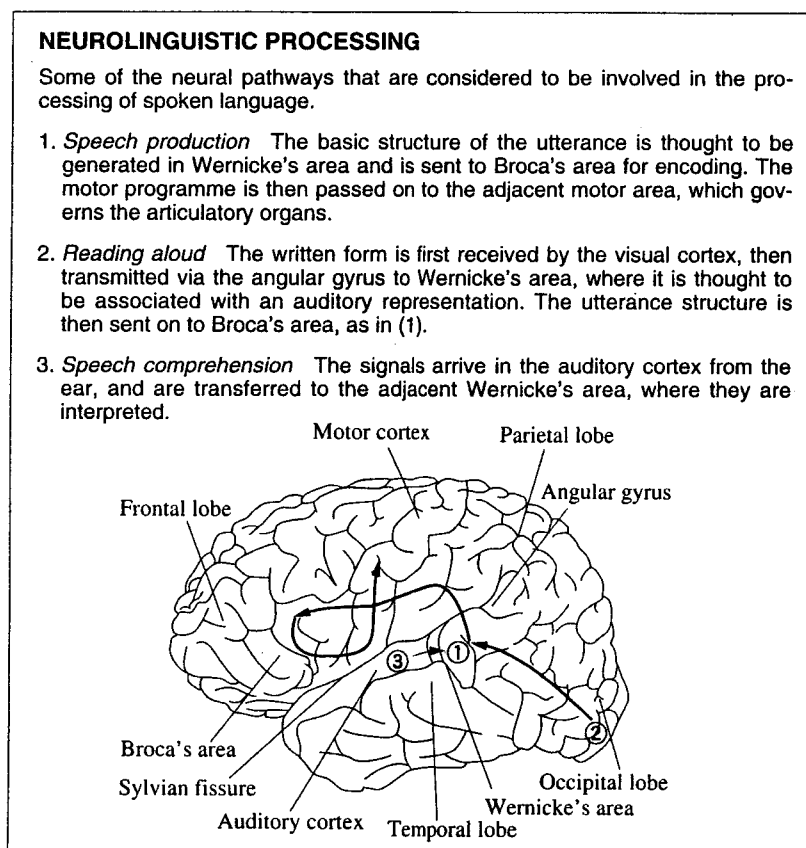
To improve interpreting performance.

Among this detailed taxonomy, I would like to take up several techniques of value in view of SLA and neurolinguistic effects. I will not address here those which are closely related to the purpose of this study, since they are subject to discussion in the latter part of this paper.

*1) Shadowing*

This is one of the most salient techniques representing the nature of interpretation, especially simultaneous interpretation. As mentioned in Table 1, both listening and speaking are performed at the same time. Shadowing contributes to the improvement of accent, pronunciation, stress, etc. It also serves to improve active listening. The neurolinguistic explanation of this technique will be simple yet convincing. Figure 1 shows the areas of the left hemisphere of the human brain associated with speech and language. Two important areas are Wernicke's area and Broca's area. The former is involved in understanding language (receptive function), and the latter in speech (productive function). Aphasia, a pathological condition of losing the ability to use and understand language, takes place when either of these areas is damaged. Shadowing activates these two major language areas because listening and speaking take place simultaneously. As Uemura (1995) emphasizes, it is vital to take a holistic approach to language learning, i.e. activating and exploiting as many parts of the brain as possible.

Figure 1. Neurolinguistic processing involving the areas of the left hemisphere in humans associated with speech and language (based on Crystal 1997:261)



## 2) Repeating

Shadowing is practiced under simultaneous occurrence of listening and speaking, actually with a time lag of a few seconds, whereas repeating is done during a "pause" after the original sentence. The information bit of this utterance is, based on my taxonomy, one sentence. Repeating more than two sentences, preferably by the unit of paragraphs, falls under a different category, i.e. "reproduction." Miura (1997) appropriately points out that repeating should be practiced without referring to the written text. This approach gives greater load to the brain, and is expected to bring forth further enhancement of STM retention and acceleration of language use automatization. Someya (1996) asserts that the average limit of precise repeating is about 20 words. This seems also true of professional conference interpreters.

This technique is inseparably related to the term "elicited imitation" used in SLA. Elicited imitation can be employed as a grammaticality judgement test to measure learners' knowledge of a language.

### 3) *Note-taking*

The importance of note-taking is expressed by two reasons. First, our internal memory capacity has limits on the STM level. Secondly, excellent note-taking facilitates retrieval from our long-term memory (LTM). We exploit “clues” for precise recall in the retrieval process. I hold the view that excellent note-taking involves the use of symbols, signs, pictures, and acronyms rather than resorting to letters and characters. This is where note-taking differs essentially from stenography.

Merits we can benefit from note-taking are, seen from neurolinguistics, that both hemispheres of the brain are activated since non-verbal clues processed in the right side of the brain are involved.

### 4) *Paraphrasing*

It is important and beneficial to nurture the skill of expressing ideas in different ways. As will be discussed later, paraphrasing and CS share one of the most prominent features. Current conditions of CS mostly address lexical problems both in theory and practice. It is therefore anticipated to go on to the sentential or propositional level, which is expressed as “beyond reference” by Kasper and Kellerman (1997). On the other hand, paraphrasing observed in the sphere of interpretation involves propositional processing to get the message conveyed as faithfully as possible to the original. Lexical paraphrasing alone will not work adequately in the discipline of interpretation.

### 5) *Sight translation*

Crucial features of this technique is to carry out simultaneous oral translation while seeing the script, and to do so in an effort to stick to the syntactical order of the source language. This processing style is called in other words “head-cut/ first-in first-out” mode. This technique especially lends itself to simultaneous interpretation, since some 50 % of conference interpretation is accompanied by presentation scripts which are handed to interpreters prior to the conference.

### 6) *Others*

“Sense group reading (*or* listening)” and “slash reading” are variations of the above technique of sight translation. These are of high value for beginners of interpretation and for learners of English. These can serve as preliminary or introductory practice to sight translation since the training purpose is to familiarize oneself with the attitude of grasping message by sense groups, using slash marks for easier identification regarding slash reading.

## 2.2. Some concepts of SLA

### 1) *Communication strategies (CS)*

CS address the questions of how learners of the target language manage to communicate in spite of their limited command of the language. The term “communication strategy” was first used by Selinker in 1972. In order to achieve the communication goals, the learners may have to compensate for a lack of knowledge of grammar or vocabulary. One of the issues centering around future CS

research is to address the learners' propositional or grammatical knowledge. This is because the research to date has predominantly concentrated on lexical problems encountered by the learners.

When we divide CS into productive strategies and receptive ones, the former has gained more attention in theory and practice. ITT are eligible for satisfying both productive and receptive purposes. For this end, ITT have much potentiality to offer as briefly described earlier. The types of ITT I will discuss in this study are geared toward receptive ones since inferencing primarily involves receptive processes.

### *2) Consciousness raising*

One of the key words of this paper is "process-oriented approach," to which I believe "consciousness raising" is closely related. Ellis (1994: 698) explains that the term "consciousness raising" is used by some researchers with much the same meaning as "formal instruction" (i.e. an attempt to focus the learner's attention on the formal properties of the language). He contrasts "consciousness raising" with "practice," the former term referring to attempts to help learners comprehend a grammatical structure and employ explicit knowledge to learn it. So, an alternative term for consciousness raising can be described as "intake enhancement."

The way I use the term consciousness raising may sound slightly different from the above view, in that one of the basic stances taken in this study is to discuss the effects of inferencing tasks on "flash or spark of memory" or "neural networking."

### *3) Associative learning*

This refers to learning which takes place when a connection or association is made, usually between two items. Types of associative learning are: association by contiguity, association by similarity, association by contrast.

This notion is closely linked to the task called "morphological guessing" addressed in this paper. In this task, "paired-associate learning" is frequently employed, which is a type of learning used in studies of verbal learning. Pairs of words or other learning items are presented and the learner is required to make associations between them.

Incidentally, association seems to be part of second nature of simultaneous interpreters as depicted by Muramatsu (1998). Masumi Muramatsu, Japan's pioneer conference interpreter, states that it is quite challenging to notice for oneself the cognitive development and expansion of expressions triggered by association from one word.

## **3. The Study**

I will discuss major ITT deemed to be inferencing tasks as a process-oriented approach to SLA. There are five of them taken up in this study : acronym guessing, morphological guessing, note-

taking guessing, phonological guessing, and predictive guessing. Note that the word guessing is used for the “inferencing” tasks instead of the term inferencing with an aim to familiarize learners with the techniques.

*1) Acronym guessing*

Insight into the nature of note-taking has led me to develop this technique. Acronyms (or initial letters words) and non-verbal marks including signs and pictures are much used in note-taking. It is indispensable to recall the original information or words by looking at these acronyms and symbols. Not being confined to the art of note-taking, acronym guessing as an inferencing task itself proved effective for training “flash or spark” of the brain activities. In practicing this task, learners are first presented with an English acronym. Then, they are given an explanation of what it means in Japanese. Upon the explanation, they get busy guessing what the letters stand for. Followed by this initial stage, learners are expected to go on to a next stage of incorporating each letter into meaningful / phrasal entity by using articles, prepositions, and set phrases if necessary.

Below are actual examples of this task.

*Example 1. acronym guessing*

acronym: MPD

explanation: It is related to illness or an abnormal mental condition. More than one nature or character of a single person is observed.

guessing of each letter: M...mind, many, mental, multiple, misery, miserable, mean, misfortune, much, mode, mourn, mournful, mixed, more, mortal, mock, missing, mischief, melancholy, malicious, mad, mania, malignant, etc.

P...pain, person, problem, people, psychological, peril, panic, peculiar, perversion, pessimistic, pessimism, plenty, possessed, paranoia, perish, pathetic, pathologic, personality, etc. D...disease, difficulty, diversity, disorder, disabled, dilemma, dying, death, dirty, dull, dual, dreadful, daydream, depression, depressive, dubious, down, damnable, damage, etc.

incorporation...many people’s dilemma, mind problem of damage, mental panic of difficulties, mental and psychological disease, etc. (The “correct” word is “multiple personality disorder.”)

It is of course important to give the correct answer. But, seen from this task, it after all is “product-oriented.” The practice of “crossword puzzles” is somewhat product-oriented. Acronym guessing is process-oriented. The process of inferencing is of higher value in that it nurtures constructing neural networking or association, and among other things flash or spark of memory.

*2) Morphological guessing*

Learners can experience “consciousness raising” by addressing morphemes. Seemingly, this task is related to an etymological approach in vocabulary building. The essential nature of this task, however, lies in neural networking or association, so does acronym guessing. Morphological guessing

raises “mild” neural networking, whereas acronym guessing aims at “sharp” neural networking.

This task can be exercised in isolation or, as indicated by associative learning, in pairs, or in threes or fours or more if deemed significant. I have chosen several “subcategories” for this practice: coinage guessing including trade term guessing, foreign word guessing, medical terminology guessing, etc.

*Example 2. morphological guessing in isolation*

acropolis...When learners are requested to take a morphological analysis into this word, there is a big chance that they will divide it into the morphemes of acro- and -polis. They may associate acro- with such words as acrobat, acrophobia, acronym, etc., coming to a tentative conclusion that acro- means “high.” As for -polis, they may come up with such words as metropolis, Minneapolis, propolis, necropolis, etc., again coming to a guess that -polis means city. In this way, they can nurture their association through the inferencing process.

*Example 3. morphological guessing in pairs*

health - heal...Intermediate learners should know what these words mean individually. But even advanced learners would have great difficulty in associating these words together if each is presented separately. By presenting both together, they will come to know or guess that health derives from heal. Their previous knowledge shows that -th is a suffix constituting nouns. Another example is the names of countries: Austria, Bulgaria, Indonesia, Micronesia, and Polynesia. When learners are presented with these names and asked what they have in common, they would point out the suffix -ia or -nesia. There is a big chance that some of them make a correct guess saying that -ia or -nesia is related to country or area. What, then, is the feature which differentiates -ia from -nesia? Students' geographical knowledge may lead them to answer that -nes would mean island, so -nesia should refer to island country. Incidentally, when a student was asked to work on morphological guessing on the word island, he answered that it means an isolated land. Etymologically, what it means is watery land in Old English, so this is not a “correct” answer seen as a product-oriented approach. But this process-oriented approach highly evaluates this student's guessing. Another similar example is Finland. When I asked a student what the origin of the word Norway is. Seen from the current U.K., Norway is situated in the north way. This is where the name comes from. Subsequently, the student was given the country name of Finland. He guessed that it is a country situated in the utmost part of the earth when in olden times the Arctic had not been found yet. So he said that Fin- is related to final. This again is an excellent guess, though in reality what Fin- means is the Finn tribe, showing that it is the country of the Finn tribe.

Other examples in pairs include: international - the Internet, university - universe, story - history, student - study, etc.



*Example 4. morphological guessing for coinage*

For some reason, I often employ pharmaceutical names.

Antabuse...Learners are first given the explanation that it is an alcohol abuse deterrent. They would say it is a combination of anti- and abuse.

Tensium...The explanation is "this medicine helps relieve tension and nervousness, and relax muscles and encourage sleep. The possible answer is it is a combination of tension and -um meaning chemical substances.

Pepsi...soft drink. If learners know the word pepsin, which means a liquid in the stomach that changes food into a form that can be used by the body, they will easily understand what it means. Additionally, this word is also related to phonological guessing to be discussed later based on its onomatopoeic effect. It makes us recall the hissing sound of carbonated beverages.

*Example 5. morphological guessing for foreign words*

By making comparisons of foreign words, learners can get engaged in vital guessing tasks. This works rather well among the Indo-European language family, especially among English, French, and German.

Directions...First, present English expressions: east, west, south, and north. Then, present French and German equivalents at random. The French equivalents are: Nord, Sud, Ouest, and Est. The German equivalents are: Ost, Westen, Norden, and Süden. Then the learners try to match these words. This example is again used as a phonological guessing because the French word Ouest is phonologically close to the English word west, so is the German word Ost to the English word east.

*Example 6. morphological guessing for medical terminology*

I initially employed this guessing exercise as a relief measure for the medical students who struggled with difficult medical terms. Medical terms are etymologically related to Greek and Latin. So the analytical knowledge of morphemes greatly help them. Medical terms, generally speaking consist of the following elements: word root, combining vowel, combining form, suffix, and prefix. Among these elements, great importance is placed on combining vowels in this inferencing task. This can be viewed to raise a flexible attitude toward the comprehension of medical words, or words in general. Combining vowels serve as "adhesive." Often letters a, e, i, u, y are used carrying no substantial meaning.

*3) Note-taking guessing*

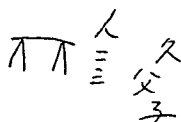
By seeing the notes taken by others, learners are encouraged to "bridge" the gap between the notes and the text on which the notes are taken. This way, the learners can imagine the internal processing of other people.

The following symbols and notes are given as examples.

Figure 2. Examples of symbols in note-taking (based on Kobayashi 1999:83)

→→	confront	×	deny	→	direction
↔	interchange	∟	depend	↗	increase
↻	discuss	↔	balance	↘	decrease
↗	increase	⌘	balance of payments	↗	go beyond
↘	decrease	⇨	stop	↔	interchange
→+	invade	↪	cross	∴	therefore
↺	go and return	→	continue	∴	i.e.
↻	armed clash	<	expand	∴	because
◦	affirm	↗	support	=	equal
				≈	similar
				↺	go back

Figure 3. Example of note-taking (based on Kunihiro et al.1969:136)



It was fine last Sunday.  
 So I took my child to Ueno Zoo  
 after a long time.  
 But it was crowded.

4) *Phonological guessing*

This inferencing task was first made public by Hiramatsu (1998b). At this stage of research and practice, it is used only as a supplementary tool solidifying other clues. This is typified by onomatopoeias such as wh- meaning wind, str- meaning strength, and gl- meaning light. Also, as mentioned in morphological guessing, this notion becomes of help in guessing unknown words from the point of phonology.

5) *Predictive guessing.*

Predictive guessing is indispensable in simultaneous interpretation. This was the starting point of my devising this inferencing task. As Mizuno (1995) introduces the view of Chernov concerning “probability prediction,” it is quite beneficial to acquire this technique. According to Chernov (1994) cited in Mizuno (1995), probability prediction consists of four factors: phonological patterns, syntax, semantics, and text and context.

## 4. Conclusion

As seen in the study, the inferencing tasks play vital roles in accelerating SLA viewed from neurolinguistics.

As the key words in Table 2 indicate, neurolinguistic approaches have many resources to offer, as represented by the characteristics of the right brain including non-verbal, visuo-spatial, intuitive, simultaneous, all of which are presumed to play vital roles in activating the brain for SLA.

Table 2. Characteristics of the two hemispheres of the brain (Based on Springer and Deutsch 1988)

Left Hemisphere	Right Hemisphere
verbal	non-verbal, visuo-spatial
sequential, temporal, digital	simultaneous, spatial, analogical
logical, analytical	Gestalt, synthetic
rational	intuitive
Western thought	Eastern thought

Grace (1998:533) suggests that inferring word meanings produces greater retention because it promotes deeper processing.

There are some studies on the research into the brain mechanism in relation to language acquisition, but most of them address brain-damaged pathology. Many studies have been reported in such established journals as *Brain and Language* related to such diseases as aphasia. Therefore, further and interdisciplinary studies into the field of practical neurolinguistics, or what may be called applied neurolinguistics are highly anticipated.

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