

EXPLORING THE COMPREHENSION PROCESS OF NONLITERAL UTTERANCES AND SOME IMPLICATIONS FOR AUTOMATICITY

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THE ISSUE of the comprehension process of L1 indirect speech acts has long been debated among philosophers, linguists, and psychologists (cf. Levinson, 1983; Bach & Harnish, 1979). Specifically, their debates have been centering on the role of literal sentence meaning in processing indirect speech acts performed in native languages: is the intended illocutionary force of the indirect speech act identified indirectly from its literal sentence meaning or directly from the locution without interpreting its literal meaning first? An attempt has also been made to explicate the role of literal meaning in comprehending idioms and metaphors in native language situations both theoretically and empirically (cf. Gibbs, 1980, 1982, 1986; Ortony et al., 1978; Swinney & Cutler, 1979; and others).

Here, a question arises as to how the same issue has been treated in the area of comprehension of L2 nonliteral utterances. Are L2 learners comprehending nonliteral utterances made in their target language in the same manner as native speakers? Are L2 learners computing the literal sentence meaning in comprehending L2 nonliteral utterances?

In this paper, an attempt will be made, first, to review how researchers have been dealing with the ways in which a hearer is said to arrive at his/her interlocutor's intention when the latter is making nonliteral utterances--indirect speech acts, idioms, and a metaphors--in both L1 and L2 situations. Then, in the subsequent section, I will make a further attempt to present a design for a study of comprehension process of L2 nonliteral utterances in order to deepen our understanding in this area.

Review of the Literature

In an effort to attain a comprehensive review of literature in this area, I

will adopt the following strategy for this section. First, the major models of the comprehension process of L1 indirect speech acts, idioms, and metaphors, and empirical evidence of comprehension of those L1 nonliteral utterances will be reviewed. Then, an examination will be attempted of how the current issue has been dealt with in the literature of L2 learning. Finally, a further attempt will be made to explore how the comprehension of L1/L2 nonliteral utterances can be accounted for within the framework of an automatic/controlled processing model (cf. Schneider & Shiffrin, 1977; Shiffrin & Schneider, 1977).

Studies of Comprehension of L1 Nonliteral Utterances

Much of the recent research on comprehension of nonliteral utterances has revolved around the theoretical claim that the hearer can derive the speaker's intended meaning either through Conversational Principles (Grice, 1968, 1975), Conversational Postulates (Gordon & Lakoff, 1971, 1975), or the rules of speech acts (Searle, 1975). These theorists share the view that the hearer must first process the literal meaning of a nonliteral utterance to determine whether or not it is compatible with various contextual conditions and conversational rules (Grice's Conversational Principles or Gordon & Lakoff's Conversational Postulates). If it is not, the hearer must attempt further processing to arrive at the speaker's intention. The crucial point here is whether the hearer *actually* processes the literal sentence meaning first in comprehending indirect speech acts, idioms, or metaphors.

A substantial number of experimental psychologists have been dealing with this issue. Based on their experiments on the processing of those nonliteral utterances, some psycholinguists evidenced that the literal interpretation of a nonliteral utterance is always computed before the conveyed meaning is derived and have established a model called the *Literal First Model* (cf. Gibbs, 1982) or the *Serial Processing Model* (cf. Reeder & Wakefield, 1987). This model, therefore, entails four stages, which will be described below using an utterance "Can you tell me the time?" (taken from Clark & Schunk (1980)). First, the literal meaning of the utterance is determined ("Do you have the ability to tell me the time?"). Second, the hearer must decide if the literal meaning is the intended meaning of the speaker. Third, if there is a conflict between the literal meaning and the specific context, the hearer has to compute the conveyed meaning ("Tell me the time.") through a cooperative principle or a

conversational postulate. Finally, the hearer uses the utterance based on its conveyed meaning. According to this model, then, the hearer is supposed to take longer to verify nonliteral utterances than literal ones due to the processing of the literal meaning before deriving the intended meaning.

Other researchers, however, strongly rejected the above four-stage model and proposed the following two alternatives based on their research findings. One is the *Multiple Meaning Model* (cf. Gibbs, 1982) where the literal and nonliteral meanings of a nonliteral utterance are *simultaneously* computed during comprehension. To be more specific, a request like "Can you tell me the time?" has *both* a literal meaning ("Do you have the ability to tell me the time?") and a nonliteral meaning ("Tell me the time."); and its literal meaning can be taken seriously along with its nonliteral meaning. Thus, under this model, the hearer is assumed to respond to the literal meaning and the nonliteral meaning at one time, as in "Yes, I can -- it's six o'clock." In sum, the Multiple Meaning Model predicts that there should be some residual left over from the literal processing that took place, even if it was not related to the utterance's conveyed meaning.

The other alternative is the *Conventional Meaning Model* (cf. Gibbs, 1982) or the Direct Processing Model (cf. Reeder & Wakefield, 1987) where the conventional meaning of a nonliteral utterance is examined first during comprehension before any possible literal interpretation is attempted. Specifically, the nonliteral utterance, "Can you tell me the time?", has the conventional illocutionary force, "Tell me the time," which is *directly* retrieved from the locution, without having to determine its literal meaning first. Hence, it is assumed, according to this model, that the hearer can *immediately* understand the conventional illocutionary force. In what follows, then, empirical evidence supporting the validity of each model presented above will be provided more specifically, according to the type of nonliteral utterance, i.e., indirect speech acts, idioms, and metaphors, respectively.

Indirect speech acts. Quite a number of studies of the comprehension of indirect speech acts have been undertaken, in particular, since the 1970s. Clark & Lucy (1975) afford strong support for the validity of the Literal First Model. Following the claim of Gordon & Lakoff (1971, 1975), Clark & Lucy tested three predictions in analyzing indirect requests. Prediction 1 is that the hearer should show evidence of having processed the sentence literally. Prediction 2 is that the hearer should take longer to understand indirect

requests than direct requests. The third prediction is that the hearer should show evidence that his final representation of a sentence is its intended meaning. The subjects were presented with indirect requests, such as "Must you make the circle blue" and "Why not color the circle blue," and were required to verify, based on the colored circles actually presented along with the sentences, whether direct and indirect, positive and negative requests had been fulfilled. The response times were compared across those indirect requests. Clark & Lucy confirmed the three predictions (though they were not able to test Prediction 2 directly), claiming that the hearer computes the literal meaning of a sentence *before* deriving the indirect meaning.

Clark (1979) later modified his view and provided some evidence for the Multiple Meaning Model. Clark (1979) conducted a series of experiments in which ordinary requests for information, such as "Could you tell me the time you close tonight?", were made of local merchants on the telephone. He found that hearers used six sources of information in making their responses to those indirect requests. These included (1) conventionality of means; (2) conventionality of forms; (3) special markers like 'please'; (4) transparency of the indirect meaning; (5) implausibility of the literal meaning; and (6) the speaker's imputed plans and goals. According to Clark, the hearer used this information in judging whether the literal meaning was intended seriously (and thus the response should be made with "Yes," as in "Yes. It's six."), as well as whether the indirect meaning was intended. Since the data evidenced the responses including "Yes," Clark concluded that hearers process both the literal and nonliteral meanings of a nonliteral utterance *simultaneously* during their comprehension task. Similar findings were also reported by Munro (1977, 1979) in his interview observations on the UCLA campus by requesting the time of day.

Focusing on the role of politeness in how a hearer chooses his response to an indirect request, Clark & Schunk (1980) conducted four experiments, which provided further evidence of the Multiple Meaning Model. The basic assumption of their study was that the more a request's literal meaning benefits the hearer, the more polite the request is and thus the more polite response could be elicited. From this, Clark & Schunk argue as follows: "people ordinarily compute both the literal and the indirect meanings of indirect requests. They must if they are to recognize when the speaker is and isn't being polite, and if they are to respond politely, impolitely, or even neutrally." (p.

111)

Some researchers, however, have cast doubt on the validity of evidence for the above two models and claim that the Conventional Meaning Model or Direct Processing Model provides a more relevant account for the process of indirect speech act comprehension. Among them, Schweller (1978) in his three experiments on the comprehension and recall of direct and indirect requests presented conflicting evidence of Predictions 1 and 2 tested by Clark & Lucy, asserting that "the hearer uses syntactic 'cues' to arrive at an immediate understanding of the conventional utterance's illocutionary force without the necessity of elaborate inferential processing." (p. 61)

As one of the proponents of the Conventional Meaning Model, Gibbs (1979, 1983) also claims that the findings of Clark & Lucy cannot be considered definitive for the Literal First Model because the target sentences were presented with no preceding context (This was also pointed out by Schweller (1978)). With attention duly paid to the presentation of relevant contexts, Gibbs (1979, 1983) conducted a series of experiments on whether people must first process the literal meaning of an indirect request before deriving its conveyed meaning. Specifically, in his 1979 study, Gibbs provided subjects with specific context paragraphs ending either indirect request sentences, literal use of the same sentences, or direct request sentences. After each paragraph story, subjects made a paraphrase judgment for those last sentences. The results of this study indicated that conventional indirect requests take no longer to read than either literal sentences or direct requests when appropriate social and linguistic contexts are provided. [The same findings were yielded in his 1983 study; and his 1981 study showed that the high degree of conventionality of a request and its context entails shorter processing time.]

Gibbs also points out that the absence of appropriate context overshadows the validity of the findings of Clark (1979) and Clark & Schunk (1980). According to Gibbs (1982, 1983, 1984), however, the more serious blow to Clark and Clark & Schunk is the possibility that the subjects in those studies simply responded *conventionally* to those conventional indirect request, rather than their computing the literal meaning of the sentence at some point during comprehension. Specifically, regarding Clark (1979), Gibbs refers to the fact that, in response to the indirect request "Would you mind telling me what time you close?", people *usually* begin their responses with "Yes" (as in "Yes, we

close at six"), instead of "No" (see also Munro (1977, 1979) for the same claim). With regard to Clark & Schunk (1980), Gibbs extrapolates that their results may be due to people knowing what are *conventionally* polite responses to *conventional* requests. Taken together, Gibbs claims that literal-first and multiple-meaning comprehension models are not accurate accounts of the processing of indirect requests.

In support of the Conventional Meaning Model, then, the central claim of Gibbs (1979, 1982, 1983, 1984) can be summarized as follows:

All indirect speech acts can be viewed along a conventionality continuum. Then, if the indirect speech acts are conventional and performed in a given appropriate pragmatic context, people are usually able to comprehend the intended meaning "directly" and we can even observe the tendency that people are automatically biased toward the conventional, nonliteral interpretation of indirect speech acts. In this sense, an analysis of a sentence's literal meaning is *not* an *obligatory* process. In the case of comprehending *novel* and *nonconventional* kinds of language use, however, people are required to make more elaborate inferencing to arrive at the speaker's intention.

It is noteworthy to recall Reeder & Wakefield (1987) here. In their study, 3- and 4-year olds were *directly* considering the nonliteral interpretations of requests and offers; they relied more on the contexts (especially, 3-year olds); and they showed a bias toward the *nonliteral* interpretation. In short, Reeder et al. successfully exemplified main points of Gibbs' central claim presented above.

Idioms. In an effort to understand the comprehension process of idioms, Gibbs and his colleagues have also undertaken a series of studies and have provided a similar claim to the above just presented for indirect speech acts, supporting the Conventional Meaning Model in processing idioms. Before these latest studies were attempted, however, two general processing models had dominated in the area of idiom comprehension.

The first of these, which is called the Idiom List Hypothesis, claims that idioms are stored in a special list which is not part of the normal lexicon. Access to this list takes place during comprehension through a special *idiom*

mode of processing (Bobrow & Bell, 1973; cf. Swinney & Cutler, 1979). The basic assumption of this hypothesis is that a literal analysis is always attempted on a word string before an idiom mode of processing activates. Bobrow & Bell (1973) examined this hypothesis using a perceptual set paradigm and confirmed that a special *idiom mode* of processing is undertaken *after* the literal analysis in the course of idiom comprehension. Hence, the idiom processing based on this hypothesis supports the Literal First Model.

The second model is called the Lexical Representation Hypothesis. This hypothesis holds that idioms are stored and retrieved from the lexicon like any other word (hence, there is no special idiom list nor any special processing mode). This hypothesis assumes that computation of both idiomatic and literal meanings is *simultaneously* initiated as soon as a hearer catches the first word in the idiom string. This assumption was verified by Swinney & Cutler (1979) in their study on subjects' judgment time of semantically well-formedness of idiom strings and nonidiom (literal) strings in English; and thus, their results are taken as support for the Multiple Meaning Model.

As briefly referred to earlier, Gibbs (1980, 1985, 1986) and Mueller & Gibbs (1987) have succeeded in verifying the validity of the Conventional Meaning Model, resulting in the confliction with the above two models. Specifically, in the Gibbs' 1986 study, for instance, subjects were asked to read idiomatic expressions in either literal or idiomatic or unrelated story contexts. Then, Gibbs measured the reading time of the subsequent target paraphrase sentences. The results suggest that people do not compute the literal interpretations of idioms either before or simultaneous to comprehending their figurative meanings. Furthermore, the following tendency was also confirmed: people are automatically biased toward interpreting literal uses of idiomatic expressions conventionally, as idioms, before deriving their intended literal meanings. The other Gibbs' studies (Gibbs, 1980, 1985; Mueller & Gibbs, 1987) share the same results as Gibbs (1986). Taken together, then, Gibbs' studies have also made a great contribution to the verification of validity of the Conventional Meaning Model for idiom processing.

Furthermore, evidence for this model is also available through Schweigert (1986) and Schweigert & Moates (1988), which suggest that the figurative meaning of familiar idioms is processed first before the literal meaning though less familiar idioms take longer time for processing than the familiar ones.

Metaphors. Several studies have been reported as empirical evidence of the Conventional Meaning Model in the processing of metaphors (Ortony et al., 1978; Pollio et al., 1984; and others). Among them, Ortony et al. (1978) conducted an experiment in which reaction times for understanding target sentences or phrases were measured in terms of a preceding (short or long) context. Their results showed that only in the short context did subjects take significantly longer to comprehend metaphorical than literal targets, enabling them to contend that context effects, again, play a significant role in metaphor processing.

As for the Multiple Meaning Model for metaphor processing, Glucksberg et al. (1982) succeeded in providing evidence for this model. Glucksberg et al. hypothesized that the metaphorical interpretation would take place instantaneously and suppress a literal interpretation based on the assumption that the understanding of metaphors and literals involves identical cognitive/inferencing processes. Using an analogue to the Stroop color-naming word interference technique, they traced the fact that subjects processed both literal and nonliteral meanings of sentences *simultaneously*.

Janus & Bever (1985), however, questioned the validity of the claims made by Ortony et al. and Glucksberg et al. above by referring to some methodological problems seen in those studies. The problem with Ortony et al. (and also Gibbs' studies, according to them) is that they measured reading time at the end of target sentences although looking at processing times within sentences at the boundaries of constituent units might be more likely to reveal the most significant differences between metaphoric and literal sentences in terms of latencies for comprehension. With regard to Glucksberg et al., Janus & Bever point out the absence of context as a major methodological problem.

The Janus & Bever study, which included appropriate contexts and selected relevant points for measuring processing times, then yielded the findings of longer reading times for metaphors than for literals. Needless to say, this lends support to the Literal First Model.

In summary, a large number of studies have been undertaken with a view to clarifying the role of literal meaning in L1 nonliteral comprehension. Three models have been proposed and supported empirically by several experimental studies. While I cannot conclusively sort out which model can most relevantly account for the current issue due to the methodological problems inherent in those studies, I can definitely make a claim for the role played by

conventionality of contexts and of nonliteral utterances themselves in nonliteral comprehension, on the whole.

Studies of Comprehension of L2 Nonliteral Utterances

Little research has been done to explore *how* L2 learners arrive at the intention of a speaker who is making a nonliteral utterance in their target language. As a matter of fact, many more efforts have been made for the other areas of *indirectly conveyed meaning*: the ability of L2 learners' inferencing presupposition as compared to assertion (Carrell, 1977, 1978) or in comparison with implication (Carrell, 1984), and L2 learners' ability to interpret implicatures in cross-cultural settings (Bouton, 1988).

By asserting the significance of a study exploring nonliteral comprehension in interlanguage, Marcum (1986) attempted to examine the ways in which learners are said to make inferences about indirect speech acts during conversation through the review of selected literature in sociolinguistics, applied linguistics, and social psychology. Marcum implies that L2 learners are surely confronting some difficulties arising out of the differences in processing strategies closely related to sociocultural conventions in interpreting various indirect speech acts (cf. van Dijk, 1977).

Learners' difficulties in comprehending L2 indirect speech acts are also empirically substantiated by Carrell (1981). In comparison with Clark & Lucy (1975), Carrell measured the correctness (not the response latency attempted by Clark & Lucy) achieved by L2 learners in understanding indirect requests with a focus on the polarity (positive/negative) of the conveyed meaning of those requests. Carrell succeeded in tracing some potentially difficult areas for L2 learners in their interpreting those requests as compared to native speakers' comprehension reported in Clark & Lucy.

Despite the significance of this study, however, Carrell failed to answer the question of how learners understand L2 nonliteral utterances, which has been the central issue of psycholinguistic research in this area of L1 as reviewed above. Furthermore, due to following Clark & Lucy, Carrell did not present relevant contexts in her experiment; and thus, the validity of her claim is questionable (cf. Gibbs, 1979, 1981, 1983). As summarized above for L1 studies in this area, conventionalities of both context and nonliteral utterances play a crucial role in tracing the illocutionary forces of those utterances. In this regard, it has been expected that L2 studies incorporate these two factors

for the current issue. Some interlanguage studies presented below have responded to our expectation.

Based on van Dijk's (1979) model of an analysis of the given context and the theoretical discussion about the comprehension of indirect speech acts, Kasper (1984) set up four predictions for L2 learners' pragmatic comprehension. These predictions manifest the interactions between a set of conventionalities of context and indirect speech acts and processing strategies (bottom-up and top-down processings). Her analysis of an L2 learner's responses to a native counterpart's indirect speech acts in role-play settings lends support to at least one of the four predictions above: L2 learners identify illocutionary force by means of a multiple-meaning procedure (i.e., combination of the Literal First Model and the Multiple Meaning Model) with bottom-up processing, as opposed to a one-meaning procedure (i.e., Conventional Meaning Model) with top-down processing, when the native counterparts perform nonconventional indirect speech acts (hints) in a given context manifesting low conventionality as perceived by the learners.

However, Kasper's explanation of the L2 learners' performance of nonliteral comprehension is not persuasive enough since she failed to provide experimentally-controlled empirical bases for claiming that subjects are *actually* employing a multiple-meaning procedure with bottom-up processing or a one-meaning procedure with top-down processing. Nevertheless, her framework of "processing preferences under various constellations of *conventionality*" (p. 7, emphasis mine) surely provided a new perspective for studies of L2 nonliteral comprehension.

Similar results to those obtained by Kasper (1984) are reported by Ervin-Tripp, Strage, Lampert, and Bell (1987) in their studies on indirect requests (hints) comprehended by children in both L1 and L2 situations. They intended to test the difference between two models of indirect requests here. One is a literal interpretation model claiming that processing of requests starts from a literal interpretation of what is said, followed by a check with context. The other is a contextually-based model, which assumes "hearers start from the situation, project normal activities for their role, process language enough to identify contextual referents and check incongruity with the projected action, but analyze immediate speaker intention only under special conditions such as irrelevance or incongruity." (p. 107) According to Ervin-Tripp et al., those children (native/nonnative) tended to rely on literal processing when the

nonconventional indirect requests were performed in nonconventional, less recognizable contexts.

However, their primary finding was that children could *immediately* recognize speakers' intentions conveyed by nonconventional indirect requests when those requests were attempted in conventional, more recognizable contexts; and thus, they supported the contextually-based model. For this situation, Kasper (1984) predicted in exactly the opposite way: learners comprehend nonconventional indirect speech acts performed in highly conventionalized contexts by means of a multiple-meaning procedure, instead of an *immediate* recognition process (i.e., one-meaning procedure). As Reeder & Wakefield (1987) claim, younger children tend to take more context-oriented processing strategies in interpreting L1 requests and offers due to their reduced linguistic knowledge, whereas older children show their favor of relying on linguistic elements in their speech act comprehension. Since Kasper's L2 learners are adults (personal communication), the difference between Kasper (1984) and Ervin-Tripp et al. (1987) could be explained by Reeder & Wakefield's extrapolation of a developmental shift in speech act comprehension strategy from an early more context-based approach to a later, more heavily text-dependent approach due to continuing development of linguistic awareness. Including the possibility of transfer from L1 processing strategies, further studies will be needed to clarify the nature of L2 nonliteral comprehension by both adults and children.

Finally, the difference in idiom processing between native and nonnative speakers will be reviewed. Focusing on both high and low familiarity idioms, Schraw, Trathen, Reynolds & Lapan (1988) examined the role of lexicalization in native and nonnative idiom comprehension. They found that native speakers understood both high and low familiarity idioms as lexicalized units while nonnatives did not. Specifically, nonnative speakers tried to understand obvious uses of idioms as if they were novel utterances, most likely using a word-by-word lexical analysis of the idiomatic phrases. Schraw et al. then concluded that, to nonnative speakers, most idioms are not lexicalized and lexical chunks are not realized in their lexical memory.

In summary, the studies of L2 nonliteral comprehension presented above suggest that there *are* some differences in processing those nonliteral utterances between native and nonnative speakers (or between adults and children) and that the conventionalities of context and nonliteral utterances,

again, have played a crucial role in nonliteral comprehension. However, in order to grasp the process of L2 nonliteral comprehension in a more clear-cut manner, well-designed experiments as carried out by L1 experimental psycholinguists should be conducted.

Nonliteral Comprehension and Automatic/Controlled Processes

Since Schneider & Shiffrin (1977) and Shiffrin & Schneider (1977) provided a putative source of evidence for automaticity through their experiments, the notions of automatic process and controlled process have been playing a central role in explicating the nature of human information processing and have influenced many psychologists or computer scientists in their theory development (Anderson, 1982; Cheng, 1985; Neves & Anderson, 1981; Shiffrin & Dumais, 1981; and others). The concept of automaticity has also been adopted by SLA researchers and has made a great contribution to their theory constructions concerning the nature of the process of L2 learning (see Bialystok, 1979, 1981, 1982, 1983, 1988; Faerch & Kasper, 1984; Goodman, Haith, Guttentag & Rao, 1985; McLaughlin, 1978, 1988; McLaughlin, Rossman & McLeod, 1983; McLeod & McLaughlin, 1986; Nation & McLaughlin, 1986; Sharwood Smith, 1981; van Patten, 1984).

In this section, based on the previous review of the literature on nonliteral comprehension, an attempt will be made to explore how the comprehension of L1/L2 nonliteral utterances can be explained by the notion of automaticity. I will undertake the current task on the basis of the automatic/controlled processes defined by Schneider & Shiffrin (1977). This is because their processing model is judged to explicate more relevantly the process of nonliteral comprehension as compared to other models, such as Bialystok's (1982, 1988) model consisting of the Analyzed and Automatic dimensions, which is intended to account for *language proficiency* or the *control of language* from a psycholinguistic point of view. Schneider & Shiffrin (1977) define an automatic process and a controlled process as follows:

An automatic process can be defined within such a system as the activation of a sequence of nodes with the following properties: (a) The sequence of nodes (nearly) always become activated in response to a particular input configuration, where the inputs may be externally or internally generated and include the general situational context. (b) The sequence is activated automatically without the

necessity of active control or attention by the subject (i.e., capacity-free) . . . Since an automatic process operates through a relatively permanent set of associative connections in long term store, any new automatic process requires an appropriate amount of consistent training to develop fully . . . A controlled process is a temporary sequence of nodes activated under control of, and through attention by, the subject. Because active attention by the subject is required, only one such sequence at a time may be controlled without interference, unless two sequences each require such a slow sequence of activations that they can be serially interwoven (i.e., capacity-limited). (pp. 2-3, last two parentheses are mine)

It has already been understood that the conventionality of nonliteral utterances and that of context play a crucial role in a hearer's arriving at a speaker's intention. Hence, the following four possible combinations of nonliteral utterance and context can be set up in terms of conventionality:

- (1) Nonconventional nonliteral utterances in nonconventional contexts.
- (2) Conventional nonliteral utterances in conventional contexts.
- (3) Nonconventional nonliteral utterances in conventional contexts.
- (4) Conventional nonliteral utterances in nonconventional contexts.

With regard to nonconventional nonliteral utterances in nonconventional contexts, most researchers, including the proponents of the Conventional Meaning Model, agree that those utterances require some elaborate inferencing strategies on the part of hearers. Hence, a literal analysis is considered to be made due to the nature of serial processing required for such inferencing. Since information processing of this kind seems to be highly capacity-limited, hearers are expected to use controlled processing in comprehending those nonliteral utterances.

Regarding conventional nonliteral utterances in conventional contexts, researchers have been seen debating over the processing of the literal meaning of those utterances. As Rumelhart (1979) claims, there may be no fundamental difference in information processing between conventional and nonconventional nonliteral utterances. The only difference is that, as a result of routinization of *associative connections in long term store*, most of the

conventional nonliteral utterances are *chunked*, which does not require any analytical procedures. Hence, when a conventional nonliteral utterance is made in the related (conventional) context, a hearer is expected to automatically chunk the message in response to the particular input configuration in that context. Therefore, it is reasonable to account for conventional nonliteral utterances in conventional contexts under the notion of automatic process.

In respect to nonconventional nonliteral utterances in conventional contexts and conventional nonliteral utterances in nonconventional contexts, the automaticity of processing of those utterances is determined by the degree of conventionality of the particular context perceived by the hearer based on his/her experience. Thus, it is probable that, while nonconventional nonliteral utterances are automatically processed, certain conventional utterances require controlled processing, depending on the perceived conventionality of that particular context by the hearer.

The same account could be made of the comprehension of L2 nonliteral utterances. The only differences between native speakers and L2 learners on this issue seem to be speed (cf. Lehtonen & Sajavaara, 1983) and accuracy in processing those nonliteral utterances. In respect to 'speed', as Schraw et al. (1988) report, nonnative speakers are more likely to fail to lexicalize idioms and thus show relatively slow processing of those nonliteral utterances. To put it another way, they have difficulty in chunking even the most conventionalized forms of language use. The similar observation is made by Lehtonen & Sajavaara (1983). They explicate that, in processing L2 idioms, learners try to resort to their explicit knowledge of the grammatical structures of the L2 as taught in the classroom. Regarding learners who have acquired their target languages in natural learning contexts, however, Lehtonen et al. fail to show how those learners process L2 idioms. Referring to the classroom learning contexts, they further argue that "the learner's tendency to rely on structural properties is reinforced by what might be called *instructional bias*." (p. 120, emphasis mine) This implies that learners who have not received any *instruction* might show a different processing style. Further research should be needed to clarify this point.

With regard to 'accuracy' in processing L2 nonliteral utterances, Carrell (1981) indicates that there are certain linguistic areas in which L2 learners make more inaccurate analyses as compared to native speakers in their

comprehension task (e.g., sentences with negative polarity). In the end, these differences in processing speed and accuracy are assumed to invite a serious communication breakdown between native speakers and L2 learners; and thus, it is most desirable that L2 learners develop automaticity in comprehending L2 nonliteral utterances.

In order to attain reasonable automaticity in L2 comprehension, however, L2 learners are expected to achieve at least the following two goals. The first goal is familiarity with both *convention of usage* and *meaning convention* (Morgan, 1978); and thus, learners are expected to cultivate sociocultural awareness in this regard (Gibbs, 1982; Marcum, 1986; cf. Blum-Kulka, 1983; cf. Gumperz, 1982). It should be noted that, if all else is equal, learners who have sufficient knowledge of the TL's sociocultural conventions are assumed to surpass others in terms of automaticity of L2 comprehension.

The second goal is the achievement of advanced linguistic skills which are good enough for learners to be able to make processing decisions automatically (Lehtonen & Sajavaara, 1983). Likewise, if all else is equal, it is assumed that advanced learners are more likely to process nonliteral utterances automatically (as *chunked* information) than beginning and intermediate learners. In reality, however, the situations would be more complex than assumed here because both the first and second goals above seem to be closely related to (1) learners' language aptitudes (aptitude factor) and (2) their motivations to learn the target languages (motivational factor).

Regarding the aptitude factor, Skehan (1989) points out the strong relationship between aptitude and achievement of advanced linguistic skills (the second goal) by arguing that aptitude is consistently the most successful predictor of second language achievement. [Note that the same claim is made by Gardner (1980); and see also Spolsky (1989).] Furthermore, referring to sociolinguistic competence, one of the four components of a model of communicative competence proposed by Canale & Swain (1980) and Canale (1983), Skehan claims that some "aptitudes would probably concern a sensitivity by some people to appropriate language use and social norms (the first goal)" (p. 47, parentheses mine). Though Skehan's claim on the relationship between aptitude and sociolinguistic competence should be empirically verified, it is reasonable to conclude here that the aptitude factor is closely related to the accomplishment of the above two goals.

With regard to the motivational factor, the intergroup theory of SLA could

provide a relevant base for associating the motivational factor with learners' achieving the above two goals. The intergroup theory was proposed by Giles & Byrne (1982) in their attempt to specify conditions for speech accommodation in an interethnic context. This theory claims that learners with their motivational tendency 'integrative' would "take advantage of available informal acquisition contexts to further their L2 skills and would, besides formal knowledge, gain high oral competence, sociolinguistic mastery, and accommodative flexibility in L2 as well as favorable nonlinguistic outcomes in the form of positive attitudes toward the outgroup and cultural enrichment" (Beebe & Giles, 1984, p. 14). Hence, while empirical evidence of this theoretical claim should be explored, it is highly predictable that the motivational factor would greatly affect both learners' familiarizing themselves with the TL's sociocultural conventions of language use (the first goal) and their achieving advanced linguistic skills (the second goal). In view of the possible involvement of the two major factors (i.e., aptitude and motivational) in learners' attaining the above two goals, therefore, I can conclude that the issue of automaticity in L2 learning should be treated from the broader perspectives.

Summary and Conclusion

In an effort to understand the nature of comprehension of nonliteral utterances--indirect speech acts, idioms, and metaphors, I have reviewed the literature in this area first for L1 and subsequently for L2 situations. With regard to the comprehension of L1 nonliteral utterances, three major models--the Literal First Model, the Multiple Meaning Model, the Conventional Meaning Model--and empirical evidence for each model have been identified. The current issue of the role of literal meaning in tracing illocutionary forces is still controversial.

The foregoing review of second language literature in this area revealed that little effort has been made to treat the issue of how L2 learners arrive at the speaker's intention when the latter is making a nonliteral utterance in their target language. Yet, a small number of studies dealing with this issue suggest that there are some differences in comprehending nonliteral utterances between natives and nonnatives.

The most significant finding through the current review of both L1 and L2 literature is that the conventionality of nonliteral utterances and the conventionality of contexts are interacting with each other and play a crucial

role in the comprehension of nonliteral utterances. As Ortony et al. (1978) suggest, conventionality, not literality, might be the key feature in determining the ease of comprehension of nonliteral utterances.

Subsequently, an attempt has been made to account for the relationship between nonliteral comprehension and automaticity based on the conventionalities of utterance and context. On the whole, it could be predicted that conventional nonliteral utterances in conventional contexts are most likely to be understood automatically, whereas nonconventional nonliteral utterances in nonconventional contexts are considered to require the controlled process. For L2 comprehension, however, it is assumed that the situations would become more complicated due to sociocultural and linguistic factors involved in second language learning. In order for learners to attain more efficient communication in the second language, therefore, empirical studies of the process of L2 nonliteral comprehension and automaticity in L2 comprehension should be explored systematically and substantially.

DESIGN FOR THE STUDY OF COMPREHENSION PROCESS OF L2 NONLITERAL UTTERANCES

Purpose of this Study

The most significant finding of the literature review is that the conventionality of nonliteral utterances and the conventionality of contexts as perceived by a hearer in the realization of a particular nonliteral utterance both play a crucial role in the comprehension of nonliteral utterances. Four possible combinations of nonliteral utterances and contexts in terms of conventionality were identified in relation to the degree of automaticity in processing those nonliteral utterances: (1) Nonconventional nonliteral utterances in nonconventional contexts (controlled process); (2) Conventional nonliteral utterances in conventional contexts (automatic process); (3) Nonconventional nonliteral utterances in conventional contexts (automaticity undecided); and (4) Conventional nonliteral utterances in nonconventional contexts (automaticity undecided). These combinations offer an ideal framework for the study of nonliteral comprehension.

Within this framework, the current study investigates the combination of (2) above with a focus on Japanese learners of English comprehending indirect

requests performed in English, as compared to native speakers of English. To be more specific, this study is intended to examine whether Japanese learners of English process the literal sentence meaning first or trace the intended meaning directly from the locution when comprehending English *conventional* indirect requests performed in *conventional* contexts. It should be noted that *conventional indirect requests* here are defined as requests which are conventionally or standardly used by the members of a particular speech community (cf. Bach & Harnish, 1979; Schweller, 1978; Searle, 1975; and others) and manifest both *convention of usage* and *meaning convention* (Morgan, 1978) (e.g., "Can you give me a drink?").

The above goal will be attained by following the experimental design developed by Gibbs (1983). In order to determine how indirect requests are processed, *response time* will be measured when a subject reads a particular indirect request and its subsequent paraphrased target sentence, respectively. Both will be displayed on a CRT (cathode-ray tube). In comparison with the response time obtained from native English speakers, it is expected that I can also assess the relative level of automaticity attained by those Japanese learners of English in comprehending indirect requests.

Research questions and hypotheses

The research question of this study is: are Japanese learners of English relying on literal processing to a greater extent than native speakers of English when comprehending English conventional indirect requests in the same contexts and thus showing the lesser degree of automaticity in comprehending those requests as compared to native speakers?

Based on Ervin-Tripp et al. (1987), Kasper (1984), Marcum (1986), Lehtonen & Sajavaara (1983), and Schraw et al. (1988), the following hypothesis will be tested:

Japanese learners of English rely on literal processing to a significantly greater extent than native speakers in comprehending English conventional indirect requests.

METHOD

Subjects

The Experimental Group in this study will consist of Japanese learners of English (N = 36, minimum). They should have intermediate to advanced levels of proficiency in English (TOEFL score 500 or above). Note that the relatively high English proficiency is required for them to judge as quickly as possible whether English sentences displayed on a CRT screen are meaningful or not. Native speakers of English (N = 36, minimum) will serve as Control-Group participants.

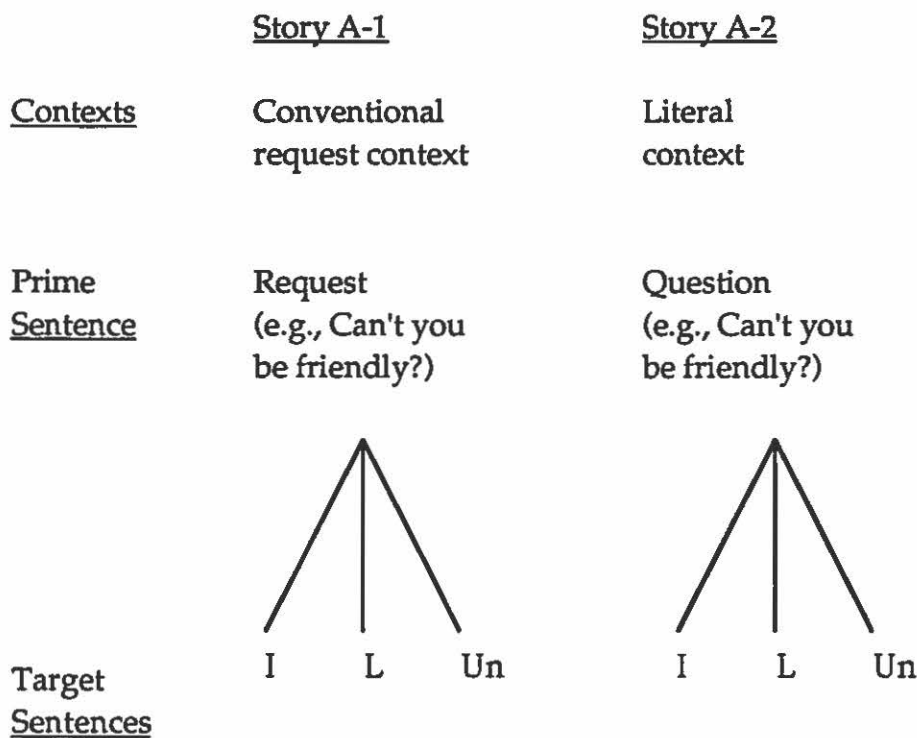
Materials

Twelve stories will be written with a mean length of six lines for each. Each story will contain conversations ending with a *prime sentence*, such as "Can't you be friendly?" (taken from Gibbs (1983, p. 526)). Among these twelve stories, six stories (A-1, B-1, C-1, D-1, E-1, F-1) will induce request interpretations and present the conventional context relative to the realization of a particular request type. Each conventional context will therefore be followed by a pragmatically appropriate conventional indirect request as a prime sentence. The other six stories (A-2, B-2, C-2, D-2, E-2, F-2) are intended to induce literal interpretations of the prime sentences.

The stories marked with the same letter (e.g., A-1 and A-2) will share the prime sentences in forms (but not in functions). To put it another way, stories A-1 and A-2 will end with the same prime sentence, such as "Can't you be friendly?", though the story contexts are different.

Each story will be further followed by a target sentence. This is either a sentence which paraphrases the prime sentence's indirect interpretation (a request), a literal paraphrase of the prime sentence (a statement or a question), or a meaningful sentence which is unrelated to the prime sentence. Each target should consist of the same number of words. The components of materials for this study are presented in Figure 1 using Group-A stories as an example.

Figure 1
Components of Materials (Case of Group-A Stories)



I = Indirect
 L = Literal
 Un = Unrelated

Three other stories will be written to serve as fillers. Those filler stories have the same components as the above experimental stories. However, the target sentences in these stories are not meaningful English sentences. In addition, two other stories will also be prepared to serve as practice items. The filler and practice stories will not be included in the data analysis. For all stories to be written for this study, attention should duly be paid to create a story context which could be encountered in both Japanese and American societies so that unfamiliarity of a story context will not affect response times.

Following Gibbs (1983), two preliminary studies will be undertaken for the construction of the main study. The first preliminary study will be

conducted in order to ensure that the stories actually induce indirect (request) or literal interpretation of the prime sentences. Native English speakers and Japanese learners of English who will not take part in the main study (N = 30, min. for each language group) will be asked to read all of the stories written for this study, including filler and practice stories. For each story, they will be asked to judge whether a final sentence (i.e., a prime sentence) conveys an indirect (request) meaning or a literal meaning.

The second preliminary study is concerned with target sentences (indirect, literal, or unrelated). Since the response times of the target sentences are also measured and compared across subjects and materials to determine the ways of processing the preceding prime sentences (see below for more details), an *independent sentence-classification task* (Gibbs, 1983, p. 527) will be conducted in advance, using native English speakers who will not participate in the main study (N = 30, min.). The purpose of this preliminary study is to ensure that there are no significant differences between response times to make the sentence-classification judgment for the three target types when those targets are provided without any preceding contexts and prime sentences. The subjects will be asked to read word strings (i.e., indirect, literal, unrelated target sentences) presented on a CRT and to decide as quickly as possible whether they constitute meaningful or correct English sentences. Response times to make this judgment will be measured and compared for each target condition.

Design and Procedure

Six different sets of materials (Sets 1 - 6) will be constructed. Each subject (a Japanese learner of English or a non-Japanese speaking native English speaker) will be randomly assigned to read one of these six. Each set will consist of six experimental stories, three filler stories, and two practice stories. Among the six experimental stories, three stories will be conventional-context request stories ending with a conventional indirect request (Condition X), and three will be literal-context stories ending with a literal sentence (a statement or a question) (Condition Y). In each condition, one story will be followed by an indirect target, one by a literal target, and one by an unrelated target. Each story will be arranged in a way that it will occur equally often in each of the three target conditions across the six sets of materials. Furthermore, the presentation order of the stories within each set will be counterbalanced across the six sets of materials.

The data will be organized according to Figure 2. The design will involve the following three independent variables: (1) prime type (two levels: conventional indirect requests in conventional contexts - literal sentences in literal contexts); (2) target type (three levels: indirect - literal - unrelated); and (3) nationality (two levels: Japanese speakers learning English - native English speakers). The primes and targets are crossed within subject. The dependent variable in this study is the response time for processing a target sentence. Hence, repeated-measures analysis of variance (ANOVA) procedure will be adopted.

Figure 2
Schematically represented data organization

(Primes)	Indirect Requests (Primes)			Literal Sentences		
	Indirect	Literal	Unrelated	Indirect	Literal	Unrelated
(Nationality)	(Targets)			(Targets)		
Japanese
ESL

English
Natives

Subjects will be tested individually. Each story (as a stimulus) will be presented on a CRT with one sentence at a time under the control of a computer, which will record all response latencies.

When the first sentence of a story appears, subjects will be told to read the

sentence and push the designated key as soon as they have understood it. When this is done, the first sentence will disappear. Then, the second sentence of the same story will be displayed on the screen. The subjects will be instructed to read each sentence in this manner. After they have read the final sentence of the story (i.e., a prime sentence), they will be provided with a certain signal (either aurally or visually); and the target string will appear on the screen. The subjects will be instructed to read the word string (i.e., the target sentence) and press a certain designated key if the word string is understood as a meaningful English sentence conveying the meaning of the final sentence in the story and another designated key if it is not (Sentence Classification Judgment Task). When this is done, that word string will disappear; and the first sentence of the next story will be presented on the screen. [Note that response times will be measured for a prime sentence and its subsequent target sentence only.]

The rationale for this design should be provided here using the example taken from Gibbs (1983) (see Appendix). Suppose that a subject has read a literal target sentence ("Are you be able to act friendly?") after reading an indirect request ("Can't you be friendly?") (a prime sentence) in an indirect request story. If the subject computes the literal interpretation of the indirect request, then, there should be some facilitation for his/her response to the literal target sentence during the sentence classification judgment. In other words, *shorter response time* can be observed for the literal target in comparison with the other two target conditions. If there is no facilitation as compared to the response times of the indirect target ("Please be friendly to other people.") and the unrelated target ("Running is excellent for the heart."), it is doubtful that the subject computes the literal meaning of that indirect request in comprehension process. If some facilitation is detected here, then, it is probable that the subject also processes the literal meaning of that indirect request.

Data Analysis

Three-way repeated measures analysis of variance (ANOVA) will be performed with primes and targets as (2x3) within-subject factors, and with nationalities as a between-subject factor. The alpha decision level will be set at $\alpha < .05$ (one-tailed, directional). Furthermore, all assumptions for the ANOVA will be checked.

SUGGESTIONS FOR FUTURE STUDY AND PERSPECTIVES

It is expected that findings of this study will clarify some aspects of comprehension process of L2 nonliteral utterances: the role of literal meaning in processing those utterances, and the level of automaticity attainable by L2 learners in nonliteral comprehension and so on. Then, it could be suggested here that future studies on L2 nonliteral comprehension involve the other combinations of conventionalities of nonliteral utterances/contexts (see the Review of Literature for more details). In other words, the effects of conventionalities of L2 nonliteral utterances and contexts and the interaction of those two factors should thoroughly be investigated. Furthermore, developmental aspect of comprehension process of L2 nonliteral utterances should also be shed light on by examining the processing performance of beginning, intermediate, and advanced L2 learners, respectively.

It should be emphasized, however, that the studies outlined above will still fail to provide a whole picture of comprehension process of nonliteral utterance. As a matter of fact, in both L1 and L2 situations, a substantial number of issues related to nonliteral comprehension remain to be resolved. Referring to L1 nonliteral comprehension, Gibbs (1983) raises two important questions that remain to be answered. One is *when* and *where* literal meaning is computed; and the other is *how* people actually process the *conventional meanings* of nonliteral utterances, in particular those of indirect requests. It goes without saying that those two questions are applicable to L2 nonliteral comprehension.

Furthermore, the issue of automaticity in the process of L1/L2 nonliteral comprehension has not been studied systematically and substantially. In fact, neither foregoing experimental studies nor the study presented here is designed to examine *whether* or *to what extent* or *how* people *chunk* the information. Resolution of this issue as well as those addressed above awaits further research. It is hoped that our further research efforts in this area will eventually enable us to overcome the still formidable barriers that exist in our understanding the nature of nonliteral comprehension and verbal comprehension process, in general.

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APPENDIX

Example of Story Contexts and Their Target Sentences

(taken from Gibbs (1983, p. 526))

Indirect story

Mrs. Norman was watching her kids play in the backyard.
One of the neighbor's children had come over to play.
But Mrs. Norman's kids refused to share their toys.
This upset Mrs. Norman.
She angrily walked outside and said to one of her children,
"Can't you be friendly?"

Indirect: Please be friendly to other people.

Literal: Are you able to act friendly?

Unrelated: Running is excellent for the heart.

Literal story

Rod was talking with his psychiatrist.
He was having lots of problems in establishing relationships.
"Everyone I meet I seem to alienate," Rod said.
"I just turn very hostile for no reason," he continued.
The shrink said,
"Can't you be friendly?"

Literal: Are you unable to act friendly?

Indirect: Please be friendly to other people.

Unrelated: Running is excellent for the heart.

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