TOWARDS UNDERSTANDING THE PROCESSING OF INDIRECT SPEECH ACTS: RECONSIDERING THE STANDARD PRAGMATIC MODEL OF PROCESSING

by

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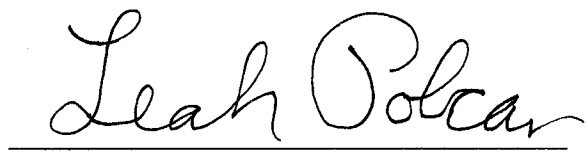
SIGNED: 

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DEDICATION

To my family, here or in memory, always with love.

Elizabeth Polcar, Bohumil Polcar, Doris Briley, John Briley Sr., Esther Polcar, Antony Polcar, and Bart Garssen.

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ABSTRACT

This investigation tests whether a stage-type model of the processing of indirect speech acts is a fully explanatory model. A stage model, like the Standard Pragmatic Model (SPM), proposes that listeners understand the meaning of an indirect speech act by first determining direct meaning and then checking this meaning against context for sufficiency. It is only when direct meaning is found not to fully capture context that a listener proceeds to understand the meaning of an indirect speech act. This sort of model has been heavily criticized in the extant theoretical and empirical research, though this investigation shows much of this criticism to be faulty and/or irrelevant to indirect speech act processing. Here, minor revision of the SPM is proposed through the introduction of c_{direct} and $c_{indirect}$ meanings that makes the modified SPM sensitive to issues of conventionality.

Two experiments test this modified model (the MSPM). Results of the first experiment showed that the MSPM is the most explanatory model in explaining the processing of non-conventional indirect speech acts. The second experiment was designed to replicate an earlier experiment by Shapiro and Murphy (1993) and to investigate the influence of

conventionality on the processing of indirect speech acts. The results of the conventionality analysis allow no clear conclusions about how conventional indirect speech acts are processed, but do call the results of the Shapiro and Murphy (1993) investigation into question. Additionally, some indirect proof is found that shows that conventionality influences the processing of indirect speech acts by making judgments of direct meaning difficult when conventional cues are present. Implications of these results are discussed and overall, the MSPM is found to be the best model for describing indirect speech act processing.

CHAPTER 1

INTRODUCTION

As language users, we are all aware that speakers can mean not only just what they say, but also more than what they say, or something entirely different from what they say. And, generally, we are able to understand what speakers mean when they speak, whether they are speaking directly, indirectly, or non-literally. However, in ordinary interaction, the ease with which we tacitly disambiguate the meaning of sounds speakers produce is not reflective of our scientific knowledge of how it is that when a speaker utters sounds, a listener understands that these sounds form words, in sentences, that reflect a particular intention of the speaker and are designed to induce a particular effect on the world. To turn a phrase from Bach and Harnish (1979), linguistic communication is easily understood, but not so easily explained.

Take the following examples:

[A] "It is getting late."

[B] Police officer to Butler: "Thank you Dillow."[1]

[C] Henry II: "Will no one rid me of this meddlesome priest?"[2]

Each example looks relatively straightforward. In

[A], the speaker simply asserts that it is late at night, in [B] a simple thanks is given, and, even in the more complicated [C], we can imagine an angry king charging his knights to rid him of his enemy. However, the picture becomes more complex with context, though no more difficult for ordinary language users to understand. If we imagine that [A] was uttered by a wife to her husband at a boring dinner party she didn't want to attend, we can easily see that the husband may accurately interpret his wife to mean "Let's leave now." In [B], couldn't this utterance function as both a thanks and as a statement that the butler's services are no longer needed (or perhaps as an order/command/request that the butler leave the room)? And, in [C], what could be taken as a call for assassination of a "meddlesome priest" could really just be a non-serious question uttered in exasperation by a frustrated king. What we can see from these examples is that in context it becomes clear whether these utterances are meant directly, meaning no more than what they directly say, or indirectly, meaning more than what they directly convey. We can also see that in either case a full interpretation of what is meant involves more than understanding the words used, but relies on an assessment

of speaker meaning in a particular context.

Identifying speaker intention is a central requirement in being able to discuss the full meaning of an utterance. It is not enough for a listener to understand what sort of propositions are being expressed in utterances; in order to make sense of language they must know what a speaker was doing in uttering these propositions. Speech act theory is one pragmatic theory that attempts to explain how it is that listeners are able to understand speaker meaning by proposing that utterances do not simply express things, but also do things, and it is the identification of what a speaker is doing in uttering words that is central to being able to ascertain the full meaning of an expression (Searle, 1969). On speech act theory, obtaining meaning relies not only on interpreting the locutionary force of an utterance (what is said: the utterance of a sentence with determinate sense and reference), but also on comprehending its illocutionary force (what is being done: what attitude a speaker is expressing in making an utterance). In other words, listeners understand speaker meaning by understanding what sort of speech act was being performed (e.g., a request, a promise, a question, a suggestion, etc.).

And of course, speakers can intend more than one meaning - they can perform any number of speech acts in the utterance of only one sentence - a phenomenon apparent in the preceding examples. So, speakers can speak directly by performing direct speech acts where they only do one thing with their utterances (e.g., saying "Pass the salt" to request the salt). Or they can speak indirectly, using indirect speech acts, doing more than one thing in making an utterance (e.g., saying "Can you pass the salt?" to both ask about a listener's ability and also request the salt).

Yet, how listeners cognitively come to understand that a speaker means more than is directly said, and by what process this occurs, is an issue that has recently caused a great deal of controversy. Despite theoretical and empirical support, it has become popular in recent years to decry the possibility that some sort of literality-first processing model could actually explain any sort of pragmatic phenomenon. By literally-first processing model, or standard pragmatic model (SPM),[3] most researchers and scholars are referring to a cognitive model of the processing of non-literal and/or indirect communication where a listener must compute the literal meaning of an utterance before computing any sort of additional

(indirect) or different (non-literal) meaning.[4] And, despite claims that this sort of model is "still accepted by a majority of researchers in pragmatics and semantics" (Récanati, 1995, p. 207), reviews of the current literature, especially from newer areas like experimental pragmatics, tell a different story. Accepting the general idea that a listener computes the totality of utterance meaning by first interpreting its direct or literal meaning, and then interpreting whether that meaning was intended in context (and if not, uses context in some way to determine the "true" or additional meaning of an utterance), is so unpopular that one could be accused of being a radical (if not something worse) to even suggest that sort of thing. Believing in the SPM, of the general type sketched above, is about as fashionable as wearing an ascot and bellbottoms.

Most of the recent criticism against the SPM has been lodged against the SPM as explaining the processing of non-literal meaning, or meaning where the speaker means something different from what he or she "literally" says (for example, metaphor, irony, metonymy, idiom, conventional implicature, reference assignation, etc.).[5] Yet, the model has also been attacked for failing to

adequately capture the processing of indirect utterances (particularly indirect speech acts), utterances where a speaker means more than he or she says. I have very little to say in this paper about whether the SPM stands as an adequate model to explain the processing of non-literal meaning, however, I believe it is too early to abandon the SPM altogether as an explanation for the processing of indirect speech acts, despite its criticisms.

Overview of the Criticisms against the SPM

Theoretically, the SPM has been attacked under the objection that literal meaning cannot be the first processing step in the computation of total meaning. The arguments for this objection are diverse, but if applicable, are potentially devastating to the SPM. As a sample of the contentions of critics, if literal meaning does not exist, or is not a meaningful concept, then it must surely be the case that any model that privileges the role of literal meaning, like the SPM, must be incorrect. However, opponents of the SPM who have marshaled these arguments against the SPM have ignored the specificity of the SPM in predicting processing of certain types of pragmatic phenomena. In the case of processing indirect speech acts, whether or not there is such a

concept/thing/phenomenon such as literal meaning does not directly address the issue of the processing of indirect speech acts, when indirect speech acts are considered as acts that are performed in addition to direct speech acts.

Most speech act theory follows this definition of indirection (Bach & Harnish, 1979; Searle, 1979). As described by Searle (1979) an indirect speech act is "one act performed by way of another" (p. 61) and as put by Bach and Harnish, it is "an illocutionary act performed subordinatively to another illocutionary act" (1979, p. 70). On this definition of indirect speech acts, the success of indirect acts is tied to success of the direct act and in terms of processing whether or not literal meaning exists would only be related to the interpretation of direct acts, not to the interpretation of indirect acts.

Further, to make the discussion of literal meaning relevant to the processing of indirect acts it would be necessary to make the identification of direct meaning somehow synonymous with literal meaning. One way this can occur is by taking Searle's (1979) account of speech acts to equate sentence form ("sentence mood") with determinations of direct meaning. This is exactly the criticism some critics have in mind, however, it does not

hold as the interpretation of direct acts relies on more than just sentence meaning. Therefore, objections against the SPM concerning literal meaning are either fully irrelevant or only relevant to a particular take on speech acts, which in itself is not correct. The expansion and full discussion of these issues is the principal subject of Chapter 1.

Even a cursory survey of the empirical research testing the adequacy of the SPM reveals that in the case of processing of indirect speech acts, the SPM does not serve as an adequate model. Yet, rejecting the standard model out of hand, at least as it applies to the case of indirect speech acts, is premature since the experimental evidence supporting such a model is weak. Currently, the experimental work is plagued by methodological problems and misreports of experimental results. It also appears to be the case that many experimental results are confounded with other variables like conventionality. It seems from the results of extant empirical work that issues like conventionality of indirect speech acts must be considered differently from non-conventional speech acts, at least in terms of processing. Discussion of the results of empirical work refuting the SPM and supporting other models

is the subject of chapter 3.

Additionally, theoretical justification for alternative models are lacking and when present, contradict major pragmatic theories of indirect speech acts. The theoretical confusion exists on almost every level of analysis, beginning with incorrect definitions of indirect speech acts and continuing through bizarre specifications of how these sorts of acts should be processed overall. There appears to be little or no theoretical rationale to explain empirical evidence or to motivate predictions stemming from alternative models. Therefore, it seems preferable to modify the SPM in-line with empirical criticisms than to abandon it altogether in favor of an ill-specified model. What sort of modifications would be necessary and the criticisms of alternative models is also the subject of chapter 3.

Modification of the SPM

Based on the suggestion in chapter 3 that a modified version of the SPM is preferable to accepting an alternative model, chapter 4 presents the results of new experiments that provide support for a modified version of the SPM. Two experiments are conducted to see what sort of model best explains processing of indirect speech acts when

conventional and non-conventional utterances are taken into account. Chapter 5 discusses the results of this experiment and suggests a revised SPM appears to be the most satisfactory explanation of the processing of indirect acts.

Chapter 1 Notes

[1] Taken from *The Complete Steel* by Catherine Aird, 1969, page 149. Example found in Thomas (1995, p. 96).

[2] According to English folklore, Henry II, King of England, uttered this sentence publicly to demonstrate his exasperation with Sir Thomas Beckett, the "meddlesome priest" and Archbishop of Canterbury. Beckett opposed King Henry II's attempts to extend governmental control over the clergy in order to expand the crown's power and continually refused to follow Henry II's orders in related matters. Beckett was later assassinated by four of Henry II's knights who overheard him, much to Henry II's surprise.

[3] The terminology "standard model" emerges from descriptive applications of Gricean (1989) theory and from characterizations of early experimental work by Clark and Lucy (1975), whose experimental predictions and explanations were working from Gricean and early Searlean (1969) speech act theory. However, the model has also been variously described as the literal first processing model (Bezuidenhout & Cutting, 2002), the serial processing model (Shapiro & Murphy, 1993), the literality-based serial model (Récanati, 1995), among others.

[4] What is meant by literal or direct, and by non-literal or indirect, varies as the model is described, applied, and discussed and is an issue that will be refined later in this discussion.

[5] See, for example, Gibbs, 1986a, Gibbs and Gonzales, 1985, Gibbs, Nayak, and Cutting, 1989, Swinney and Cutler, 1979 on the processing of idioms. See, for example, Gibbs, 1994, Gildea and Glucksberg, 1983, Glucksberg, Gildea, and Bookin, 1982, Keysar, 1989, on the processing of metaphor. See, for example, Gerrig, 1989; Gibbs, 1990, on metonymy. See, Gibbs, 1986b, 1994, on irony. See, for example, Bezuidenhout and Cutting, 2002, Gibbs, 1999a, 1999b, 2002; Gibbs and Moise, 1997 on conventional implicature and reference.

CHAPTER 2

THE PROBLEM OF INDIRECTION: THEORETICAL CONSIDERATIONS

The SPM was first suggested by Clark and Lucy (1975) to provide an abstract description of the stages necessary for the cognitive processing of indirect utterances. As it is applied to indirect speech acts, the SPM consists of three general stages based on the idea that indirect language requires additional, or different, or special cognitive resources to be understood.[1] In the first stage, the listener derives and represents the literal interpretation of the sentence. In the second stage, the listener tests this literal interpretation against the context to see if it is plausible or not. If plausible or appropriate in context, then the literal interpretation is taken to be the intended meaning. If implausible or not appropriate, for example if it contradicts some obvious fact, felicity condition, or some rule of conversation, then the literal interpretation is rejected as the intended meaning and the interpreter proceeds to the third stage. In the third stage, if applied, the literal interpretation is combined with an appropriate rule of conversation and this leads to the appropriate intended meaning.[2]

Recently, this model has come under attack both

theoretically and empirically. For many, if not most scholars the problem of the processing of indirection has apparently been solved or at least solved to the extent that the SPM is considered fully refuted and could never serve as an explanation of the processing of indirect speech acts. Despite claims that the SPM is an unworkable model, I believe the adduced refutation is not conclusive on either the theoretical or empirical fronts. I will consider the strength of the empirical proof for this refutation in the next chapter and here consider the merits of the theoretical criticism of the SPM.

The major criticism lodged against the SPM can be reduced to the claim that the model is incorrect in granting processing priority to the computation of literal and direct meaning. There are two general lines of argument, not necessarily mutually exclusive, generally presented to defend this assertion.[3] In my estimation, the first line of argument concerns the state of literal meaning as classically defined, where the argument amounts to a claim that since literal meaning does not meaningfully exist, it is certainly not the first stage in processing the total meaning of any utterance. Though there are merits to this argument in discussing speaker meaning in

general, I will argue below that this line of argument is irrelevant when applied to the processing of indirect speech acts.[4] The second standard defense deals with the relationship of direct meaning to direct speech act computation within conceptions of speech act theory.[5] Despite being relevant to the discussion of processing indirect speech acts, these objections seem to amount to a criticism of Searlean speech act theory, or at least one take on it, and not to criticism of literal meaning as a necessary computational stage in the processing of indirection from a non-Searlean perspective. Therefore, I argue that these objections do not really hold in the case of indirect speech act processing generally. Given these criticisms of the criticisms of the SPM, it appears the ultimate conclusion of this theoretical review must be to reject the refutation of the SPM as conclusive. But first, let us consider these arguments in a bit more detail.

The Problem of Literal Meaning within the SPM

The first argument that the SPM is incorrect revolves around the claim that there is no discernable literal meaning that plays a part in the processing of figurative and indirect language use. This particular criticism has two potential outcomes as applied to the SPM: either that

well-defined literal meanings do not exist and therefore they could not be a first processing step; or to the extent that there is such a thing as literal meaning, it is not a useful concept when discussing processing of speaker meaning and therefore could not be a first processing step. For either outcome, the rejection of literal meaning is usually framed as an objection to a classic conception of literality.

Traditionally, literal meaning has been defined as a type of linguistic meaning that is grammatically specified or compositional, sentential, and context-free (Katz, 1977). Additionally, it is generally assumed that literal meaning is also capable of being determined by reference to truth-conditions, independent of a speaker's particular intentions (Carnap, 1956; Davidson, 1979; Lewis, 1972). When discussing this sort of overall definition, many scholars have argued literal meaning does not exist based on rejecting one of these criteria for literal meaning, as in arguing literal meaning is context dependent (see, Bach, 1994; Récanati, 1993), or that it is not fully truth-conditional (see, Gibbs, 1994; Lakoff, 1987, or Searle, 1979, on the context-dependence of truth conditions). To illustrate the sort of objections made to literal meaning

we can consider the alternative argument that literal meaning is not compositional and therefore literal meaning either does not exist or is not a useful concept.

Bartsch (1996), as cited in Ariel (2002), Gibbs (1994, 2002), and Récanati (1989) have all made a convincing case that the literal meaning of a proposition derived from a speaker's knowledge of the meaning of a sentence's constituents and how these constituents fit together syntactically is untenable when strictly applied. It has been argued that even on the level of the word within sentences that compositionality is not always preserved in literal meaning (Bartsch, 1996, as cited in Ariel, 2002). Because words have meanings that are sometimes dependent on other words in a sentence, take the case of difference in the meaning of "cut" in "cut the cake" versus "cut the lawn", the literal meaning for individual lexical items cannot be computed without reference to other components of a sentence; here, the meaning of "cut" must be found by determining what the object of this verb is. Since the meaning of a word can only be found by accessing other constituents in a sentence, no such concept of literal meaning for words could exist. So, even on this fairly "literal" comprehension level, the failure of literal

meaning to contribute to the comprehension of sentence meaning purportedly demonstrates that literal meaning would not have processing priority since there is no true literal meaning. Though this argument is concerned with the relationships of lexical items to sentence meaning, it is extrapolated to the cases of speaker meaning (or utterance meaning) more generally and is used to demonstrate that literal meaning could not have processing priority in determining any non-literal or indirect utterance meanings.[6]

More directly to the case of speaker or utterance meaning, the compositionality criterion has also been challenged at the sentence level (or better, the level of the proposition literally expressed). For Récanati (1995), literal meanings may exist, but they are not meaningful to processing sentences. Though constituents may have literal meanings, and these literal meanings may in fact be processed before non-literal meanings, a whole sentence will never undergo a processing stage where all of its constituents are represented literally. For processing of sentences then it would be impossible for literal meaning to be represented fully, checked against context for sufficiency, then rejected in favor of any sort of non-literal interpretation (see also, Gibbs, 2002).

To prove this point, Récanati (1989) considers, as one of his examples, the sentence "The ham sandwich is getting restless". To Récanati, to understand that this sentence refers to a person who ordered a ham sandwich, and not to an actual sandwich, one only analyzes "the ham sandwich" in relation to the predicate to conclude that it could not be an actual sandwich. One does not analyze the entire sentence in context to determine this metonymical meaning.

So, on this account, literal meaning on a sentence level could never exist, and so it could not be a first step in processing figurative or indirect language. There is at least one major problem with this objection when the case of indirection is discussed. To apply this criticism to the case of indirect speech acts is to confound indirection with non-literality and this confounding happens on several levels. When discussing speech acts, a distinction should always be made between the meaning of a sentence (as a linguistic expression) and the meaning of the sentence in context; its use on a particular occasion in a particular context. To discuss the use of sentences in contexts is to speak of them as utterances or, when using speech act terminology, as speech acts. Speech act theory was developed specifically to address the difference

between meaning and use, so to invoke the problems with literal meaning as an objection to the processing of speech acts is to assume that direct speech acts are synonymous with literal sentence meaning. This cannot be the case when discussing speech acts as a pragmatic, and not simply a semantic, phenomenon.

Dealing with the treatment of speech acts as pragmatic, therefore treating the theory as one where the objective is to determine how sentences are used to reflect speaker meaning, a direct speech act is interpreted by reference to its felicity conditions. These conditions specify how context must be for a particular utterance of a sentence to count as a particular use, or to embody a particular illocutionary force on a given occasion (Searle, 1975). So, the meaning of a speech act is understood, at least theoretically, only partly in reference to the literal meaning of a sentence (Searle, 1975). The true "meaning" of a speech act concerns more than sentence, but also some specification of speaker and listener beliefs that must be understood in order to make sense of, or determine the use and meaning of, a particular linguistic expression.

To conflate literality with direct speech acts, by

assuming that a direct speech act is a literal meaning is not only a fundamental misunderstanding of what traditional speech act theory is aiming at, but problematic on the level of analysis concerning indirect speech acts. It may be interesting to determine how it is that literal meaning plays a part in the interpretation of direct speech acts, particularly in the case of processing, but the central objection from researchers invoking concepts of literal meaning is to show that the computation of indirect speech acts do not rely on interpretations of literal meaning, at least in a first processing step. However, a major unclarity is apparent here: why would it be that indirect speech acts are at all reliant on interpretations of literal meaning?

First of all, the interpretation of the meaning of an act is only partly, if at all, dependent on some sort of independent sentence meaning.[7] Secondly, the interpretation of an indirect act is not, at least on some views of speech acts, dependent on a mismatch between literal meaning and context, but on the mismatch of the direct speech act, again understood by more than just literal meaning, and context. An indirect speech act is an act where there is more than one speech act being performed; or using

traditional terminology, where an indirect speech act is one act (the indirect act) performed by way of another act (the direct act) (see, e.g., Bach and Harnish, 1979; Searle, 1975, 1979). This sort of multiple act conception of indirect speech acts means that when an indirect speech act is performed there are at least two acts being performed; that a communicator wishes to communicate something in addition to what he or she directly said. So, interpretations of indirect speech acts are dependent on the relationship of the direct speech act to context, i.e., does the direct speech act adequately capture what is happening in a particular context (does the fulfillment of its felicity conditions, however conceived pragmatically, identify the meaning of the utterance) or does a particular communicator mean more than simply what is communicated in the direct act (are some other set of felicity conditions (also) being fulfilled)?[8]

Even though speech act theorists disagree about what sort of felicity conditions are used in the interpretation of the meaning of an utterance, and whether the meaning of an indirect act is dependent on felicity conditions as conceived of by Searle, an issue discussed below, there is still agreement by most that since a speech act is

understood by more than the literal meaning of a sentence an indirect act cannot be understood by the fact that its literal meaning is defective in context. This makes the objection to the SPM, on the basis of the problems in the conception of literal meaning, irrelevant to whether the SPM correctly describes the processing of indirection. Whether literal meaning exists, in any form, would only address the issue of how direct meaning is interpreted and says nothing about how indirect acts are processed. If it is true that literal meaning is not the first stage in the processing of direct speech acts, say because it does not exist, so what? The better question to answer here is whether direct speech acts are the first stage in processing indirect speech acts. Again, this should be the case because indirect speech acts are not tied to interpretations of literality of sentences; or at least this is the case for scholars who are concerned with speech act theory as a theory of the use of utterances.

It may seem that these objections to the SPM are more applicable if one assumes a different perspective on speech acts. One alternative conception is to say the interpretation of speech acts is not based on determination of use of sentences, or understanding contextual factors

that give utterance's meaning (in the sense of felicity conditions), but on determination of the syntactics and semantics of performative clauses in sentences (Saddock, 1974).[9] On this view, though widely criticized, illocutionary force is determined by the semantic meaning of implicit or explicit performative verbs, "capturable either in terms of entailment or semantic presupposition" (Levinson, 1983, p. 251). Under this theory, an indirect speech act is defined as an act where there is a discrepancy between surface form and use, meaning the sentence meaning of an utterance is not consistent with context. To contrast this sort of surface form conception of indirection with a multiple act perspective, it may be useful to consider how both perspectives would treat the example, "Can you pass the salt?", where the speaker is attempting to get the listener to pass her the salt.[10] Under the multiple act conception, the speaker is both directly questioning and indirectly requesting. Under the surface form conception, the speaker is only performing the request: the act is only indirect in that the interrogative form of the sentence is not consistent with the sentence type associated with requesting.[11]

Given these sorts of definitions of speech acts, both

direct and indirect, it would seem that objections about literal meaning, particularly assumptions of truth-conditionality and compositionality, would hold since sentence meaning appears to equate with literal meaning. But again, the problem in applying the objection that literal meaning is not a useful concept (or does not exist) still amounts to an irrelevant criticism as the objections to the SPM presented above are related to the idea that *traditional* literal meaning does not exist, not that there is no such thing as *sentence* meaning. So, the objections in terms of processing amount solely to whether literal meaning is a first processing step necessary for computing sentence meaning. Given that, even though the surface form theorists would argue an "indirect" act is determined because its literal meaning (meaning sentence meaning) is not consistent with context, they are still relying on notions of some sort of sentence meaning and not directly committed to traditional literal meaning. This means objections over the content (and existence of) literal meaning is again irrelevant to the processing of indirection. Literal meaning may or may not have some bearing on interpretations of direct meaning, but the interpretation of indirection should not be related to

issues in literal meaning failing to fully capture context, but instead on whether direct meaning fails to do this.

There is yet one final way to see why the discussion of literal meaning is in fact irrelevant to the processing of indirection. To assume literal meaning has anything to do with the processing of indirection is to define an indirect act as a non-literal act, therefore treating indirection as just one pragmatic option under any pragmatic theory concerned with cases where a speaker's intent differs with sentence meaning. I have already presented evidence that the idea of a direct speech act should never be synonymous with either its literal meaning (or sentence meaning, for that matter), but have somewhat skirted the obvious difficulty inherent in treating indirection as non-literality.

Though there are several reasons to resist this classification, the most important objection is that under a multiple act perspective to indirection an indirect speech act can be both indirect and non-literal. Here, non-literality refers to the communicator meaning something different from what they literally said, perhaps in the sense of meaning something different from what the sentence communicates. Cases of sarcasm, irony, metaphor, metonymy,

and the like are all prime examples of non-literality. A direct act can be performed by a literal or non-literal utterance, as in asserting non-literally "Your room is a pig sty" or asserting literally, as in the assertion "Your room is a mess". In either case, the direct act is the assertion "Your room is a mess". To equate non-literality with indirection is not only incorrect, as these are different concepts, but also allows scholars to take the questionable step of bringing evidence about the processing of non-literality to bear on the case of indirection.

For example, Shapiro and Murphy (1993) have argued that results from experiments on metaphor, which demonstrated that literal meaning is not the first computational step in processing metaphor, provide proof that the computation of indirect speech acts also does not rely on some computation of literal meaning (see also, Gibbs, 1994; Récanati, 1995, for examples of applying results of non-literality experiments to cases of indirection). Though it may be the case that the computation of indirection does not require that some other sort of linguistic (or utterance) meaning be accessed first, whether or not the computation of to demonstrate this by demonstrating that the computation of non-literal

meaning does not rely on some sort of prior meaning computation is beside the point.[12]

So, invoking the argument that literal meaning as traditionally conceived is not the first stage in processing, either because literal meanings do not exist, or because literal meaning is not a useful concept, does not directly bear on the issue of indirect speech act processing. What has been concluded is only that literal meaning, as traditionally conceived, may not be necessary for computing what a speaker means, in the sense of what was expressed, or in terms of deciphering the direct speech act performed. And further, that any evidence that literal meaning is not a necessary computational step in the processing of non-literal meanings should be irrelevant to the investigation of the processing of indirection.

The Problem of Indirect Speech Acts within the SPM

The second major objection is framed as the first, in that literal meaning is believed to not be a first processing step in the calculation of total meaning, but differs in that the second objection has less to do with literal meaning as traditionally conceived and is instead about what the SPM assumes about the nature of direct speech acts. Here then the objection is about whether

under a particular definition of direct speech acts direct acts would have processing priority. Even though the term literal meaning is being used there are two general reasons to believe literal meaning in this objection is synonymous with direct speech act meaning allowing my formulation of the second objection. First, even a cursory glance at the research reveals this sense of literality. From Clark and Lucy (1975):

> Nevertheless, the speaker also has available other less direct means for getting across what he intends the listener to understand. He can use declaratives to request or promise things (for example, *I'd like you to open the window; I will be there by six*), interrogatives to assert facts (*Did you know that Max has the plague?*), imperatives to ask questions (*Tell me why you love Jocasta, Oedipus?*), . . . and the like. Each of these examples, uttered in the right context, yields a conveyed meaning that does not coincide with its literal meaning. (p. 57)

From Clark (1979):

> Most sentences can be used to convey meanings indirectly. *Is Julia at home?* can be used in its literal sense to ask a question, a *direct* speech act.

(p. 430)

From Hirst, LeDoux, and Stein (1984):

> The classic example of an indirect speech act is: 'Can you pass the salt?' This utterance has two possible interpretations: a direct or literal reading that treats the utterance as a question, and an indirect reading that treats the utterance as a request. (p. 27)

From Gibbs (1984):

> In earlier work (Gibbs, 1979), I demonstrated that people take no longer to process indirect requests such as *Must you open the window?* (meaning *Do not open the window*) presented in story contexts than to understand literal uses of the same expressions (meaning *Need you open the window?*). (p. 524)

Secondly, this use of literality is consistent with Searle's (1975) definition of literal speech acts. For Searle, a literal speech act is performed whenever a sentence's literal meaning matches the speaker's intended meaning: "the literal meaning of [an illocutionary act] is such that its literal utterance constitutes a performance of that illocutionary act" (Searle, 1975, pg. 61). Or, in other words, a speech act is considered literal when its

direct meaning is communicated by a particular performative formula in a particular syntactic mode. So, a more appropriate wording of the second objection, to differentiate it from the objections over the existence and usefulness of literal meaning, is that direct speech act meanings do not need to be computed prior to the computation of indirect meanings.

Despite this clarification, a puzzle emerges concerning the definition of direct speech act meaning. I believe a majority of researchers criticizing the SPM are relying on a notion of the meaning of a direct speech act as fairly equivalent to the sentence meaning of an utterance. Though this sounds bizarre, as direct speech acts have already been defined as understood in reference to some set of contextual conditions (conditions regarding speaker and listener beliefs and commitments) or felicity conditions and the meaning of a sentence, there is some reason to believe that this sort of characterization of direct meaning is not as unusual as at might first appear.

Both Austin (1969) and Searle (1969, 1979) have made the argument that the illocutionary act is associated via some sort of convention with the form of an utterance, in order to distinguish the act performed from the act

obtained and the pelocutionary effects of certain utterances. This association of act and form allows, in Searle's expansion, that illocutionary forces can be conveyed through various sentences types, but that there is always one form that conventionally and directly expresses it; the explicit performative sentence, I hereby <performative verb> you (that) <complement sentence>.

This assumes both that any speech act can be understood by reference to an explicit performative verb, when analyzing or comprehending explicit performative sentences, or, in the case of implicit performatives, that certain sentence types can aid in the determination of illocutionary force by their common conventional grammatical association with certain illocutionary forces (via some sort of illocutionary force indicating device). Based on this, it has been attributed to Searle that this amounts to a correspondence between interrogatives as questioning, imperatives as directing/requesting, and declarative sentence forms as stating or asserting (Gazdar, 1981). Of course, the determination of a speech act is also reliant on whether certain felicity conditions obtain, however, as Levinson (1983) points out, Searle's specification of felicity conditions basically become a

specification of the semantics of performative verbs and so his theory is at least "a semantical exercise characterizing the meaning of various illocutionary force indicating devices, which clearly include explicit performatives and the main sentence types" (p. 264).

Given this sort of characterization, and in terms of indirect speech acts, any sentence that fails to have the force associated with either its performative verb or its conventional sentence form should then be considered indirect.[13] In the case of utterances where the performative verb is not explicit, this means that any indirect speech act has the direct force given by the conventional form and an additional indirect force understood by reference to principles or rules of inference that will derive, from the sentence meaning and direct force and context, the relevant indirect illocutionary force (Levinson, 1983).

There is ample reason to believe it is this sort of take on indirect speech acts that many of the SPMs critics are relying on. Reconsidering the preceding quotes in light of this discussion, it appears all the authors are casting direct meaning as a conventional meaning associated with the form of a sentence. For example, Clark (1979) and

Gibbs (1984) fairly directly say that the literal meaning (and of course literal meaning means direct meaning) is the meaning determined by sentence form, as in Clark (1979): "*Is Julia at home?* can be used in its literal sense to ask a question, a *direct* speech act" (p. 430). Since there are no other criteria for the determination of direction, say an account of felicity conditions of some sort, there is no reason to assume that direct speech act meaning is given by anything other than the conventional use of the sentence. This can also be fairly clearly demonstrated in the Clark and Lucy (1975) quote where indirect acts appear to be any act not associated with conventional forms of sentences or why else would it be so remarkable that an interrogative could be used to assert a fact or a declarative to make a request? Considering this definitional move in light of the SPM, it appears a more accurate representation of the first stage in the SPM would read as follows: In the first stage, the listener derives and represents the conventionally understood force associated with the use of a particular sentence type or performative verb. So, applying this to the SPM, it would only be the failure of the conventionally associated force with sentence type to match context that would trigger the search for some sort

of indirect meaning.

It is unsurprising that researchers find this troubling and therefore disregard the SPM as explanatory. This is unsurprising since a major criticism of speech act theory, when discussed from this perspective, is that it is implausible that sentence form *fully* determines (and allows the full interpretation of) direct speech act meaning. As discussed by Alston (2000):

> This is because sentence meaning by itself does not suffice to determine all the features of the illocutionary acts the sentence can be used to perform. The meaning makes an essential contribution to that determination, but the conventions and practices of speech are such as to make provision for sentence meaning to interact with contextual indications to produce illocutionary acts that go beyond that meaning. That makes it possible for one's utterance to carry illocutionary force or conceptual content or references to particular individuals who are not contained in the sentence. It also makes possible figurative uses in which one plays variations on the sentence meaning to produce new propositional contents. (p. 188)

Speech act theory itself, though this departs from the view attributed to Searle, should allow that any sentence form can be used to directly perform any speech act since the issue of pragmatic meaning will always stems from the satisfaction of felicity conditions. Sentence form is simply not enough to fully indicate the illocutionary force of an utterance; in order to understand an utterance the recognition of speaker intention is necessary. If this is true, it is contradictory to assume, for example, that if requests are not in imperative form, they are somehow indirect, even when their direct expression perfectly satisfies the felicity conditions of requesting.[14] Related to this issue, is the second problem that the sheer variety of standard ways to express direct speech acts means speech acts not in appropriate sentence form will always be indirect, meaning the utterance has both a direct and an indirect illocutionary force. However, assuming there always must be, or even can be, an intended direct force in indirect acts is problematic since it is not clear that certain utterances can retain their direct force when uttered indirectly.

Levinson (1983), using directives performed by way of interrogatives as an example, has noted that it is

impossible for some indirect requests to retain their direct meanings as questions. Compare the utterances, "Can you pass the salt?" and "May I remind you that your account is overdue?". In the first, the direct force of the question can be interpreted and addressed by a listener. It is possible, and not uncommon, for a listener to respond to this utterance by both saying "Yes" and passing the salt. However, in the second example, it is impossible for a listener to answer the question since the indirect act of reminding is performed just by uttering this sentence. There is no permission that needs to be granted and therefore the question is incapable of being answered in any serious manner. The sentence, though interrogative in form, cannot be said to have the direct force of a question (Levinson, 1981).

The criticisms about the nature of direct speech acts reveal a parallel sort of reasoning to the criticisms of the SPM discussed in reference to the concept of literal meaning, where literal meaning was considered either non-existent or not meaningful to the processing of indirection. Here, the above objections demonstrate that it makes no sense to propose a model of the processing of speech acts where indirect acts rely on the computation of

direct speech acts if direct speech acts are considered synonymous with sentence form, either because direct meanings do not always exist, or because they are not meaningful to processing. However, to posit that direct meanings do not exist is troublesome from a theoretical account of indirect speech acts. Again, an indirect speech act can only exist where two speech acts are performed and that makes it theoretically nonsensical to propose an indirect act can exist where no direct act exists.[15] What seems more reasonable is to assume that in the absence of a "direct" act for the "indirect" speech act what an utterance counts as is "direct". Illustrating with the Levinson example, why not say that "May I remind you your account is overdue?" is a *direct* reminder and is not indirect in any way if it is the case that the sentence matches the felicity conditions for reminding.

Of course, the objection may immediately arise that treating indirect speech acts in this way is completely at odds with speech act theory, since the utterance in that example must be indirect. However, the only reason to assume that this is an indirect act is because there is a troublesome sentence form in context - meaning we have run flush against the central problem of treating direct acts

as always understood by sentence form alone. Referring to traditional speech act theory, are not sentence forms simply illocutionary force indicating devices?

Though I understand the way this definition became intertwined with notions of direct illocutionary force, Searle's (1979) original statement seems to indicate the sentence forms, or performative verbs for that matter, are only indicative of force and the actual speech act must be interpreted by reference to felicity conditions. Or substituting terminology, sentence meaning/sentence form is only indicative of an illocutionary act potential (Alston, 2000). The true interpretation of speech acts cannot be made with reference to sentence form alone - it simply gives the listener a clue, a heuristic, a default assumption of what a direct act speech act may be and the only way for a listener to understand a speech act is in reference to some set of mutually recognizable speaker and listener beliefs.[16] If we take sentence form in this way - to be indicative of a particular speech act, not as fully determinate of it - then the second line of criticisms mounted against the SPM do not necessarily hold. Under this different sort of conception of direction in speech acts, where an indirect act is indirect not because its

sentence form does not match context, but because its function does not,[17] then nothing has been defended except that the interpretation of an indirect act is not based on sentence form. What has not been addressed is whether an indirect act is based on the interpretation of a direct act when a direct act is interpreted by more than sentence meaning alone.

Therefore, I believe that the issue of the suitability of the SPM as an actual processing model of indirection has still not truly been questioned. From speech act theory, an indirect act cannot exist, or be processed, without reference it its direct act or, in other words, by the demonstration that the direct speech act fails to adequately capture context in a particular situation. However, if a direct act is understood based on more than sentence form, and instead with reference to felicity conditions (of whatever sort), none of the examples presented in this account actually refute this claim. While it may appear the identification of meaning in "May I remind you your account is overdue?" is not reliant on failure of the question to capture context, it may be instead that the question construction was never entertained by a listener and instead she computed only its

direct meaning, the reminder.

For a successful refutation of the SPM, what must be demonstrated is that the processing of indirect acts does not rely on the processing of direct acts. None of the criticism so far is able to make this claim. As discussed, proof regarding the failure of literal sentence meaning to have processing priority does not directly bear on this question and criticizing the SPM based on equating direct speech act meaning with sentence meaning is a criticism of a particular view on speech acts, not on the SPM. Despite this lack of conclusive refutation, it may still be the case that empirical work could justify the claim that the SPM is an unworkable model. This is an issue I turn to next.

Chapter 2 Notes

[1] The stages within the SPM are meant to be an abstraction of the total process of pragmatic comprehension and, as such, do not provide the cognitive mechanisms by which hearers comprehend speakers. In order to be more fully explanatory, the stages must be made more specific by reference to theory. For example, the SPM can be elaborated to account for indirect language processing by adding conversational postulates, rules, and/or some sort of inference scheme. Take for instance Searle's (1975) account of the steps in processing indirection, or a more fully cognitive account as found in Bach and Harnish (1979), something of which would be necessary in order to make the SPM actually explain linguistic processing.

[2] Here, the terminology is meant to be consistent with Clark and Lucy's (1975, p. 58) formulation of the SPM. They use the term literal, though the term literal and direct could be substituted for literal without perverting their intentions in formulating the model. However, the use of the term literal should be maintained at this point as their use of literal is what has allowed some critics to attack the SPM on the basis of literal meaning, as classically conceived (see, this chapter), and not on the basis of questioning the processing priority of direct meaning, or on any issue related to speech act theory, where direct meaning has a particular definition.

[3] This distinction is mine as in the literature they are typically presented under the umbrella objection that literal meaning is simply not the first step in processing. Unfortunately, in the literature, sometimes literal meaning is meant in its specific sense, that is literal meaning as classically conceived, and sometimes it is meant as literal and direct meaning in an attempt to encompass pragmatic meanings (see, note 6, this chapter). Nonetheless, I attempt to distinguish in this chapter the meaning of literal meaning in the extant arguments, hence the dual distinction.

[4] Though nonetheless very important when determining enriched pragmatic meanings, or if there is something that can be called literal meaning.

[5] The use of the term "speech act" can be somewhat ambiguous since it can either be taken to refer to a characterization of illocutionary force (e.g., a request) or a characterization of illocutionary force plus propositional content (e.g., requesting someone to pass the salt). Both are correct, since no speech act could be performed without specification of locutionary or propositional content (see, Searle, 1969), however, it is important to note some terminological slippage is possible. I will generally adhere to the first definition and attempt to be clear when I revert to the second.

[6] As described by Levinson (1983), a sentence "is an abstract theoretical entity defined within a theory of grammar, while an utterance is the issuance of a sentence, a sentence-analogue, or sentence-fragment, in an actual context" (p. 18). Following Wittgenstein (1953), an utterance meaning is one which can be generated by reference to pragmatic phenomenon, that is information that is generated by the act of using language itself. This allows a contrast then with semantic information, that information that is generated by the lexical items themselves (Bach, 2003).

In this example, the controversy surrounds the extent that lexical items contain information that is independent from contextual information and to what extent there is some meaning (of words within sentences and therefore to sentences themselves) that is independent of the use of sentences in context (or, as Bar-Hillel (1971) would suggest, the pairing of sentences with context). The extrapolation discussed to speaker meanings, since a speaker meaning can still be thought of as the sentence meaning intended in a context, is meant to follow a Gricean (1975) distinction between what is said and what is implicated. Whether or not what is said is meant to be determined by sentence meaning or utterance meaning, above this meaning is still a meaning intended by a speaker to communicate an implicature or to "do something with words", a lá Austin (1962).

[7] Take the example, "Get out of here". This can mean directly that the speaker is directing (requesting, ordering, commanding, etc.) the hearer to leave. Of course, even though this interpretation relies on the same literal content, it can be interpreted directly as an expression of disbelief. The point here is that literal meaning, whatever its status, is used in the determination of direct meaning in some way, but neither is it able to account fully for how a hearer understands a direct act nor could it be the basis for the determination of indirect meaning.

[8] The notion of context is notoriously difficult to pin down and define (see, e.g., Duranti & Goodwin, 1992; Miller, Cody, & McLaughlin, 1994). Context can mean everything from W. I. Thomas' definition of the situation to purely cognitive constructs like mutually contextual beliefs (MCBs) (Bach & Harnish, 1979) or even to surrounding text structures that fashion the sense of any potential utterance (Sanders, 1987; Schegloff, 1988, 1992). My usage tends towards MCBs. While surrounding text can certainly activate context in important ways, and there are certainly important social elements of context, I believe these can be handled by the way in which they are relevant to the formation of MCBs.

[9] In some ways, seriously considering this approach to speech acts can be misleading. The sort of semantic account of speech acts suggested by Sadock (1974) and others has been shown to not hold as an adequate explanation of speech acts (see, Levinson, 1981, for the failure of this theoretical perspective). To treat this theoretical account here is dangerous in both suggesting that this is a standard approach to speech acts that merits consideration, which has not been the case for some time, and also assumes that the SPM critics would be taking this approach seriously when presenting their criticisms against the SPM, which is also most likely not the case. However, I mention it since there are some who may still subscribe to a more linguistic view of speech acts and therefore, though the SPM critics are not specifically attacking this view, I view it as important to briefly consider what the

implications of the criticisms would be to the semantic account of speech acts.

[10] Though this example is highly conventional, it is not the conventional nature of the example that is of interest here, but simply how these approaches would analyze any indirect act, conventional or otherwise.

[11] So far, I have yet to clearly define the various categories of speech act types, nor provide a clear description of the illocutionary forces of specific speech acts within this type. I will do so here.

The standard typologies given to characterize the major classes of speech acts differ from author to author. Searle (1979) originally relies on the five categories of representative, directive, commissive, declarative, and expressive to capture, respectively, utterances that commit the speaker to the truth of something, utterances that are attempts by the speaker to get the addressee to do something, utterances that commit the speaker to some course of action, utterances that effect immediate changes in the institutional state of affairs, and utterances that express a psychological state. This classification scheme has been criticized for being somewhat ad hoc, in that the types of speech acts are not truly based systematically on felicity conditions, leading others to develop different taxonomies (see, Hancher, 1979, for a review of typologies).

For example, Bach and Harnish (1979), have reduced the classification scheme to only four major differing types of illocutionary acts: constatives (utterances which express the speaker's beliefs and his intention that the hearer have or form a like belief), directives (utterances which express the speaker's attitude toward some prospective action by the hearer and his intention and belief that his utterance, or the attitude it expresses, be taken as reason for the hearer's action), commissives (utterances that express the speaker's intention and belief that his utterance obligates him to do something), and acknowledgements (utterances that express the feelings of the speaker regarding the hearer, or, in cases where the utterance is formal, the speaker's intention that his utterance satisfy a social expectation to express certain

feelings and the speaker's belief that it does (Bach, 2000; Bach & Harnish, 1979, ch. 3).

Under either system, specific illocutionary acts, like requesting, predicting, accepting, offering, promising, etc. are all located under these general classes. For a complete taxonomy of acts, see either Seale (1979) or Bach and Harnish (1979), but using only Bach and Harnish's four class distinction, generally the constative/representative category would contain specific acts like asserting, stating, predicting, describing, informing, reporting, announcing, and assessing; directives would include asking, urging, inquiring, questioning, requesting, commanding, consenting, excusing, sanctioning, prohibiting, restricting, suggesting, warning, advising, and recommending; commissives would include promising, swearing, vowing, offering, guaranteeing, and inviting; and acknowledgements would include greeting, thanking, bidding, and wishing.

[12] The mechanisms that are operative in non-literal meaning need not be the same as the mechanisms utilized for determining indirect meaning. First, what can be considered literal and non-literal can vary between types of non-literal utterances, e.g., between metaphor and irony or between idiomaticity and metonymy. Second, even within one category of non-literal meaning what is considered to be literal meaning varies. Both of these objections can be expanded by a surface examination of metaphor.

Much research has shown that metaphors, which can be characterized as figures of speech in which a term or phrase is applied to something to which it is not literally applicable in order to suggest a resemblance, as in "A mighty fortress is our God", are processed no differently than literal sentences, as in "God is strong" (see, Gibbs, 1994, for a review of processing of metaphor). To illustrate, Davies (1983) believes there are three general types of metaphor. One type consists of almost dead metaphors, such as "Betty is a ball of fire", which verge on the idiomatic. The second are prosaic metaphors, which correspond nicely to Searle's propositional conception of metaphor, where "one sees, or thinks of, one thing as another, but the imagination is scarcely engaged. Thinking of A as B is hardly distinguishable from believing that A

is C, D, and E" (Davies, 1983, p. 82). Examples of this type include "Sally is a block of ice" or "The ship ploughed through the sea". The final type, poetic metaphors, are the sort where "seeing one thing as another involves a complex of propositional and non-propositional attitudes and elements which are not attitudes at all", such as we frequently see in poetry, "The mountain sat upon the plain/In his eternal chair" (Davies, 1983, p. 81). What we can gather from Davies' discussion is that what should be considered the "literal" meaning of the metaphor varies considerably within metaphorical types.

In the case of dead or almost dead metaphor, we see that "literal" meaning is basically synonymous with metaphorical meaning. To use another example, "John is a pig", it can be argued that "pig" literally means messy or dirty (and is processed as such). This makes these cases similar to the cases of idiom, where the literal meaning of an idiomatic phrase is its so-called literal meaning (see Lewis, 1969 on the conventional relationship between idioms and idiomatic meaning; Gibbs, 1980, 1985, 1986a, 1994 on direct idiomatic meaning retrieval; and Prinz, 1983, on the link between idiomatic meaning and literal expression in the cognitive development of children). To use these sorts of utterances non-literally would likely entail meaning what was literally communicated or to attempt the metaphorical comparison on a different trait than the commonly accepted one -- for example, in saying "John is a pig" to mean that your actual animal named John or to mean that John is highly intelligent, as pigs are purported to be.

However you take it, what is happening in terms of processing of this sort of metaphor must be very different than what would be occurring in the case of prosaic or poetic metaphor, where one is dealing with higher level comparisons -- where the literally expressed proposition is either of the type where it is closely (but not as closely as in dead metaphor) associated with the metaphorical comparison, in the case of prosaic metaphor, or existing a much more abstract level of several propositional links between the subject and the comparison. In these cases, it is possible that the SPM model may work to explain prosaic metaphor (given the close link between these sorts of metaphors and the type discussed by Searle (1972)) and

perhaps is more hard pressed to explain the poetic metaphors, which seem more of the type described by Gibbs (1994) and others when discussing the idea metaphorical processing is best described by some alternative model.

For example, it may be that the SPM explains only poetic metaphor, given that to make the complex metaphorical comparison, some account of literal meaning may be necessary. To understand "The mountain sat upon the plain/In his eternal chair" may necessitate understanding the literalness of "sitting" and "chair", and the illogical use of these terms applied to an inanimate mountain, before one has the ability to connect this description with the appearance of this mountain (being present forever in a manner than implies having dominion over the land). Since the metaphorical understanding here relies on several levels of computation (what is literally said, the application of this to context, what could be metaphorically meant, and then what this means in the context at large), an SPM-type model may provide an account of this processing. However, the SPM processing may not be as needed in the case of prosaic metaphor, when these metaphors contain what is almost idiomatic meaning, so the determination of metaphorical meaning is practically compositional, meaning that there is no true literal meaning functioning as a processing step. This would then resemble the arguments made earlier by Récanati in the case of compositionality and metonymy.

Of course, this entire speculation could be turned around so that it seems logical that the SPM would only explain cases of prosaic metaphor (given the close link between these sorts of metaphors and the type discussed by Searle (1975) in an account of metaphor that leads to the development of a SPM-type model of metaphorical processing and the fact that these metaphors are not idiomatic) and perhaps is more hard pressed to explain the processing of poetic metaphors, which seem more of the type described by Gibbs (1994) and others when discussing the idea metaphorical processing is best described by some alternative model. The reason for the differential processing of poetic metaphor then could rely on a conception following a Lakoff and Johnson (1980) account, where the argument is made that our understanding of concepts is metaphorically structured. On this view, it

could be that when people are presented with complex metaphorical relationships, they simply do not (cannot) think literally since our understanding of metaphorical language relies on the preexisting metaphorical knowledge that is part of our conceptual system.

Nonetheless, these issues are to be solved by those who study metaphorical processing and the important thing to see now is simply the complex relationship between non-literal language use and models of language processing. Given the varying arguments, it could be that the SPM is right for all accounts of metaphor, only right for some, or wrong for all, but whether this is something that bears on indirect speech acts (a different sort of pragmatic meaning altogether) is a separate issue.

This digression into the problems in metaphorical processing should serve as modest evidence that the subject of non-literality is complicated and quite different from the case of indirection. Therefore, since we can expect different types of processing among different types of non-literal utterances (perhaps SPM processing of idioms and context dependent processing for poetic metaphor) and perhaps even different types of processing within non-literal utterance types (SPM processing of prosaic metaphor and context-dependent processing of poetic metaphor), it is untenable to suggest that processing in one arena of pragmatics would immediately map onto processing in different areas.

[13] Though it appears that Searle does completely not hold the view Levinson (1980, 1983) and others attribute to him. Searle allows that illocutionary acts are not directly associated (even literally and directly) with language via the "form" of the expression, if form is taken to be sentence mood. For instance, a declarative sentence could be used to perform (literally and directly) an assertive, commissive, expressive or declarative speech act. Imperatives can be requests, orders, commands, etc. This is contained in his notion of illocutionary force indicating devices (Searle, 1979). Nonetheless, this view on Searle's theory forms the basis for the criticism that indirect meaning cannot be understood in reference to sentence form.

[14] I use the sense direct here to refer to those theories that rely on more than just mood to intrpret direct meaning, i.e., all theories that specify a set of felicity conditions or mutually understood beliefs must also obtain for something to count as a direct expression of something (e.g., Alston, 2000; Bach & Harnish, 1979; Searle, 1975, 1979).

[15] And this is more than simply quibbling over a certain definition of indirection. For indirection to be a meaningful concept, and to embody what is intended by both modern and traditional speech act theory, it is mandatory to consider an indirect act a multiple act. If not, the problems in surface act conceptions of indirection immediately ensue (see, note 8, this chapter).

[16] It should be mentioned that others have proposed alternate ways to recognize speech acts -- and that is a way that is emergent from context and conversation itself. For example, Labov and Fanshel (1977) propose illocutionary points are understood by the use of speech acts in conversation.

[17] And here, function can be considered in reference to either a set of felicity conditions or the mutually shared beliefs between speakers and their listeners. What is important to see here is simply that speech acts can never be fully interpreted by only their sentence form and that sentence form only gives a listener an indication of potential meaning, but not constitute the whole of it.

CHAPTER 3

ALTERNATIVE MODELS OF COMPUTATIONAL PROCESSING OF INDIRECT SPEECH ACTS AND EXPERIMENTAL SUPPORT

Theoretical criticisms aside, the SPM may still fail to accurately depict processing. The bulk of empirical research concludes that this is in fact the case. Ostensibly, several experiments have demonstrated that the SPM is an unworkable model and other models have been suggested that purportedly more accurately capture the processing of indirect meaning. Yet, much of this research is problematic. Many experiments are plagued by methodological problems that fail to eliminate competing hypotheses or suffer from over-generalized conclusions that are not warranted from the results. Additionally, the models suggested as alternatives to the SPM are themselves contradicted by research results and do not seem to have the power necessary to adequately explain indirect speech act processing. The beginning sections of this chapter examine these ideas in more detail by presenting the empirical evidence for the SPM, presenting the competing models, and reviewing the conclusions that can be made from research supporting these models and refuting the SPM.

As the chapter progresses, it will become apparent that the results of the experiments taken at large do indicate that the SPM, at least when conceived of in a particular way, is flawed. Yet, the empirical results hardly trumpet any of the alternative models proposed. Therefore, this chapter will conclude with a section speculating on what the conclusions that can be made from the extant research indicate about the way people process indirect speech acts.

The Development of the SPM

As discussed in the preceding chapter, the SPM was first hypothesized and supported from the results of an experiment conducted by Clark and Lucy in 1975. Though the SPM is currently used as the exemplar of any sort of model where the direct or literal meaning of a sentence or utterance is a necessary first step in computing the total meaning of an utterance, be that meaning indirect or non-literal, the SPM was specifically developed for the case of indirect speech acts.[1] More specifically, it was designed to explain intended meaning in the case of indirect speech acts, where by the Clark and Lucy definition, this means any meaning given in addition to what a sentence would literally - and directly - mean. So, to Clark and Lucy,

the sentence "Would you mind opening the door?" is an indirect request since the sentence literally - and directly - communicates a question (given its interrogative form), but in a particular context can be additionally communicating a request. To Clark and Lucy (1975) all conveyed (indirect) requests arise from:

> a recipe requiring three ingredients: (1) the literal meaning of the sentence, (2) the perceived context, and (3) a so-called conversational postulate. Consider *Would you mind opening the door?* spoken by S (the speaker) to A (the addressee). Its literal meaning, the first ingredient of the recipe, might be stated as follows: "S is asking A whether or not A would object to opening the door". A likely context, the second required ingredient, might be stated as follows: "S nevertheless believes that A would not object to opening the door". Since the perceived context is directly contradictory to the literal meaning (why should S inquire about something he already believes is true?), the sentence must be taken in some other sense. Such a reinterpretation in turn requires the literal meaning to be considered in conjunction with an appropriate conversational

> postulate, namely, "If S questions A's willingness to do something when in fact A's willingness is not in doubt, then S is requesting A to do something." By deduction this postulate leads to the correct conveyed interpretation: "S is requesting A to open the door". So by the combination of the literal meaning, its context, and an appropriate conversational postulate, the listener can deduce the meaning the speaker must have intended in context. (pp. 57-58)

In this research, there are two issues that must be clarified: the use and meaning of the words literal meaning and direct speech act. First, at points in their experiment, Clark and Lucy are concerned with literal meaning as distinct from direct speech act meaning. Under this definition of literal meaning, and following their specification of the SPM, they discuss how the literal meaning of a sentence should be processed or understood before direct meaning is determined. Applied to speech acts, this means that listeners should first understand the literal meaning of a sentence and then decide what sort of direct speech act it is, and after that computational step, determine conveyed meaning if necessary. Therefore, they treat literal meaning as synonymous with sentence meaning

and as a concept that is used to determine direct speech acts.

On the other hand, they are also concerned with the notion of indirect (conveyed) speech acts, and how they come to define what counts as conveyed and literal, and how these concepts relate to sentence meaning, becomes fairly confusing. On first glance, it appears that they rely on a mismatch between sentence form and function to indicate the presence of conveyed meaning - for example, the only utterances they classify as indirect requests are those in interrogative form. So, it appears that when they use the term literal they do equate direct meaning and literal sentence meaning as determined by sentence form. At least sometimes. The complexity occurs when they classify certain examples that are in declarative form as "direct" requests. Since the typical sentence form for a directive would be an imperative, this is an odd move if they would like direct meaning to be synonymous with literal sentence form. So, it is unclear exactly what the criteria are for differentiating between direct and indirect requests, except by referring to their own experimental classifications.

In order to test the SPM, and both the concepts of

processing literal meanings and direct speech act meanings, Clark and Lucy conducted an experiment consisting of showing 23 participants a series of graphics with a sentence on the left side of the display and a picture of a circle (colored either pink or blue) on the right and asking the participants to verify each sentence against the picture. Participants were instructed to treat each sentence as a request to color the circle a particular color and the picture as a response to the request. Sentences were constructed to vary between direct requests (e.g., "Please color the circle blue"), conveyed (indirect) requests derived from speaker-based sincerity conditions (e.g., "I would love to see the circle colored blue"), conveyed (indirect) requests derived from addressee-based sincerity conditions (e.g., "Can you color the circle blue?"), and conveyed (indirect) requests derived from addressee-based reasonableness conditions (e.g., "Why not color the circle blue?").[2] The sentences also varied in that within each category described above the polarity of conveyed meaning was either positive or negative (e.g., in the direct request condition the positive meaning condition would be "Please color the circle blue" and the negative "Please don't color the circle blue"). Altogether, the

participants saw 80 sentences (2 of each category described above, in positive and negative form) differing in that some sentences referred to the color pink or blue and some were shown with a blue circle or pink circle. Participants were asked to verify whether the picture matched the sentence and pushed either a yes (referred to here as true) or no (referred to here as false) button on a computer to indicate this. So, for example, "Why not color the circle blue?" would be true if the circle were blue, false if the circle was pink.

Clark and Lucy made two major predictions that directly tested the SPM.[3] The first prediction tested was that a listener should show evidence that he or she had come to the literal interpretation of a sentence before he or she had come to its conveyed interpretation. This prediction corresponds to the first sense of literal meaning described above and would demonstrate that a literal representation of the sentence must occur before a listener assigns speaker meaning.

Clark and Lucy expected that negative requests such as "I'll be very sad unless you color the circle blue" (using "unless" as a negative form of "if" meaning "if not") should take longer to comprehend than positive requests

like "I'll be very happy if you color the circle blue". This prediction was based on early research that demonstrated negative sentences take longer to comprehend than positive sentences (Chase & Clark, 1971; Clark, 1970; Clark & Chase, 1972, 1974). Since the sentences used to test this prediction had the same conveyed meaning, both are requests, but different literal meanings (one positive, one negative), it would be expected that if people do determine/interpret literal meaning before determining/interpreting what a speaker means, that differences would appear in response times for positive and negative sentences. This prediction was supported in the current experiment and interpreted as indicating that language users do comprehend literal meaning in a distinct stage occurring before comprehending conveyed meaning.

The second prediction was that a listener should take longer to comprehend a sentence whenever the intended meaning is different from the literal meaning, all other things being equal. This was tested by comparing the response times for judgments of truth or falsity of declarative sentence forms versus interrogative sentence forms, where all sentences were meant to be direct or indirect requests. This prediction was based on the

assumption that deducing the conveyed meaning takes time and since declarative forms indicate a conveyed meaning that is consistent with literal meaning they should be more quickly responded to than indirect, interrogative forms (whose literal meanings are inconsistent with conveyed meaning). Again, there is the potential confusion here regarding why declarative forms would allow a ready interpretation of a directive, however, it appears the reasoning here is that a declarative form can more or less directly communicate a request, as in "I would like you to color the circle blue", and interrogatives, since clearly performing the act of questioning in addition, do not.

Though this prediction was phrased to test the speed of processing for literal meaning and direct and indirect conveyed meanings, taken alone, it can be reformulated as testing whether direct speech acts are processed faster than indirect speech acts. As far as more recent applications of the SPM go, it is this sort of interpretation that is usually ascribed to the Clark and Lucy experiment. Clark and Lucy found about a 300 millisecond difference in the evaluation of truth and falsity of declaratives sentences (direct requests) versus interrogative sentences (indirect requests).[4] Overall, this

most frequently cited finding provides support that literal meaning of a sentence must be derived before indirect or conveyed meaning and overall supports the SPM.[5]

The Context-Dependent Parallel Model

As suggested, the model suggested by Clark and Lucy has come under considerable attack and several alternative models have been proposed. Though there are differences among alternative models, they all share the same fundamental characteristics and for now will be treated generally under an umbrella model that can be termed the context dependent model (CDM). The CDM as applied to the processing of indirect speech acts is most associated with Gibbs and emerged from his early experiments challenging the results obtained by Clark and Lucy (see, Gibbs, 1979, 1981).[6] The important difference between the SPM and the CDM is in the treatment of indirect meaning (or for that matter, any non-literal or figurative meaning).

In the CDM, it is assumed that the same cognitive processes used for comprehending literal and direct meaning are used in the comprehension of any non-literal or indirect meaning. This assumption stands in sharp contrast to the SPM, since in the CDM, the comprehension of non-literal or indirect meaning is not taken to be a special

process and this model does not privilege the place of literal meaning as a first step in comprehending total meaning (Gibbs, 1994; Gibbs & Gerrig, 1989). Instead, both literal (or direct) meaning and indirect meaning are treated as one of a host of potential or possible meanings that are activated or constructed when comprehending any sentence in context. In this way, the CDM shares features of a connectionist or interactionalist model where many meanings can be activated by a context but only the meaning(s) with the strongest activation will emerge as the intended meaning(s) (whether this meaning is direct or indirect or something else).[7] So, in theory, when a listener hears an indirect request, all possible meanings of this indirect request are available to the listener and the selection of meaning is dependent directly on context, not on the failure of direct or literal meaning to adequately capture context.[8] Importantly then, the CDM suggests that all meanings are equally privileged and direct or literal meaning is not necessary for divining indirect meaning.

Early empirical support. The earliest support for this model was from Gibbs (1979), where he conducted an experiment to remedy his complaint against the results of

the Clark and Lucy (1975) experiment, arguing that the results do not provide an adequate picture of processing since the stimuli used by Clark and Lucy were context-free. According to Gibbs, "if the context in which an utterance is given is sufficient, it will provide a semantic framework in which to interpret the sentence. Without context, the understander/hearer has no predictive power and consequently must process the sentence in a more bottom-up manner which may require more processing effort" (1979, p. 2-3). Therefore, Gibbs believes that "given an appropriate *situational* and *linguistic* context indirect requests may be understood directly" (1979, p. 2). Like Clark and Lucy, Gibbs also studies indirect requests, though his terminology differs from Clark and Lucy's usage. Though Gibbs also uses the term literal and direct, from his descriptions and examples it appears that Gibbs uses literal meaning to refer to the direct speech act meaning of an indirect request. When he uses conveyed meaning, he refers to the indirect meaning of an indirect request. So, to be clear, Gibbs appears to interpret the Clark and Lucy result as meaning that direct speech acts, when directness is determined by sentence form, are not necessary for the processing of indirect speech acts. Or, put differently,

indirect speech acts presented in context should take no longer to comprehend than direct speech acts in context.

In his first experiment, participants were presented with stimuli from two conditions: one where target sentences were preceded by story contexts and one where they were not. In either condition, participants were asked to judge whether a particular paraphrase was true or false for a particular target sentence, where the target was a sentence that could have either (or both) a literal (direct) or conveyed (indirect) meaning. The conditions were crossed with sentence content, a variable with two levels: literal paraphrase and conveyed paraphrase. In the "with-context" condition, stories either supported a literal (direct) interpretation of the target utterance or a conveyed (indirect) interpretation of the target utterance. Table 1 presents the example of the story contexts and paraphrases given in the Gibbs experiment.

Table 1
Example of With-Context Stimuli from Gibbs (1979, p. 4)

Sentence Content	
Literal	*Conveyed*
Mrs. Smith was watering her garden one afternoon. She saw that the housepainter was pushing a window open. She did not understand why he needed to have it open. A bit worried she went over and politely asked; *"Must you open the window?"*	One morning John felt too sick to go to school. The night before he and his friends got very drunk. Then they went surfing without their wetsuits. Because of this he caught a bad cold. He was lying in bed when his mother stormed in. When she started to open the window John groaned; *"Must you open the window?"*
Paraphrase: "Need you open the window?"	Paraphrase: "Do not open the window."

Participants saw 30 stories overall (12 filler stories and 18 experimental stories - 9 would have literal/direct interpretations and 9 would have conveyed/indirect interpretations). In both conditions, there were two measures: comprehension time (how long it took to read the target sentence) and paraphrase judgment time (how long it took to judge a paraphrase of the target sentence). The final measure of response time was the amalgamation of these times since Gibbs argued participants might press the comprehension button before they really understood what

they read. Therefore, it was supposed that the overall time would be a more accurate measure than either of the separate times. Only those subjects who gave correct paraphrases to 1/3 of the sentences were included in the analysis and only those target sentences that were followed by a correct paraphrase were included in the data analysis.

Gibbs found that literal paraphrases in context take longer to process than conveyed paraphrases in context (4545 msec v. 4041 msec). Without context, subjects took 450 milliseconds longer to judge conveyed sentences than literal sentences. This supports his argument made against the Clark and Lucy results since differences between literal and conveyed interpretations predicted by Clark and Lucy were only present when there was no supporting context. Gibbs however does not attribute this finding to support for the SPM in any fashion, but instead concludes that differences indicate problems in understanding direct requests without appropriate context. This result combined with the failure to find that conveyed sentences take longer to be processed in context allow Gibbs to conclude that this result "clearly supports the idea that people are just *not* understanding the 'literal' interpretation of the sentences before deriving conveyed meaning" (1979, p. 6).

Typically, the results of this experiment are reported as demonstrating that indirect (conveyed) speech acts take *no longer* to understand than direct (literal) speech acts (see, e.g., Gibbs, 1979, 2000; Récanati, 1986; Shapiro and Murphy, 1993). While this is true, it is also wordplay. The results from Gibbs actually indicate that literal (direct) paraphrases took significantly *longer* to understand than conveyed (indirect) paraphrases and this is a result worth considering since it is not immediately apparent why literal paraphrases should take longer to judge in context (or why literal and direct speech acts should take longer to process) than their conveyed counterparts. The SPM would clearly suggest that direct speech acts should be understood more quickly than indirect acts and the CDM would suggest there should be no differences between the processing of direct and indirect speech acts, but neither suggests direct acts should take more time to understand. Gibbs himself is silent on this issue.

One possible reason for this finding would be that the experiment itself simply did not provide the sort of evidence that truly tests the hypothesis Gibbs puts forth. If this reason holds true, then any differences could be a

function of any number of confounding variables and this potentially means that the results are basically unable to be interpreted (at least in terms of addressing the hypothesis in question). Janus and Bever (1985) have made precisely this point in analyzing Gibbs' experiment. First, they contend that the story contexts used by Gibbs do not clearly reflect the conditions. This appears to be an appropriate criticism, as in the literal context shown in Table 1, both contexts appear to point equally to a conveyed interpretation. Mrs. Smith is depicted as not understanding why the window had to be open, a condition that could indicate she believed the painter should keep the window closed, which makes this target an indirect request. If this interpretation is valid, then the paraphrase "Do not open the window" seems possible here as well. Also, in that text, the words "politely asked" were used, which points to a conveyed interpretation. Though this possibility does not explain why literal acts in literal contexts would take longer to process than conveyed acts in conveyed contexts, it does point to a potential confound in the experimental stimuli. Since only one example was given, it is difficult to estimate the extent of this problem on the experiment overall. But, if these

conditions were intermixed, the results cannot be attributed to differences between conveyed and literal sentence comprehension.

Janus and Bever (1985) also question the interpretability of results since measuring comprehension at the end of a sentence is problematic. They argue that judgments at the ends of sentences in context are routinely subject to a specific elongation of attention due to contextual integration processes. This elongation of attention could have masked differences in processing time between literal and conveyed paraphrases. So, what could be causing the differences is not the processing of indirect or direct speech acts, but the amount of time it takes to cognitively integrate the material. However, as in the first objection, it is still not clear why it would be that literal paraphrases took longer to process. The objections listed so far simply call the entirety of the experimental results into question.

If it is assumed that despite some methodological issues that the results of this experiment are still interpretable, then it remains to be explained why literal sentences took longer to process in literal contexts. It may be possible to interpret these findings if the results

of the Clark and Lucy experiment are reconsidered. Clark and Lucy found that interrogatives take longer to process than declaratives. In the example Gibbs provides, the paraphrase of the literal context is an interrogative. While the other stimuli are not given here, since all the examples are supposed to be indirect requests, it stands to reason that all the examples of paraphrases in the literal context were interrogative in form. If so, then perhaps the slow-down in the judgments of the literal target sentences occurred not because participants accessed both literal and conveyed meanings directly, but because they were processing interrogatives instead of declarative sentence forms.

The Clark and Lucy result also provides a competing explanation for why Gibbs found that conveyed sentences without context took longer to process that literal sentences. Remember, Gibbs attributed these differences to sentence complexity only. But in his example, the conveyed no-context sentence has a negative conveyed meaning while in the literal condition the question is not rendered negatively. As discussed above, Clark and Lucy found that negative sentences take longer to process than positive sentences, so the observed differences could be

attributable not to demonstrating sentence complexity, but to differences in sentence polarity. This would actually support the notion that literal meaning exists since polarity is at the level of literal meaning and not conveyed meaning. This replicates then the results of the Clark and Lucy work and actually supports the notion that literal meanings exist and are processed before conveyed meanings.

The influence of conventionality. There is yet another competing explanation for the Gibbs results and this explanation centers on the notion of conventionality. Gibbs conducted a series of experiments that demonstrated that conventional utterances are processed faster than non-conventional utterances and this could also explain why literal sentences took longer to comprehend than conveyed sentences.

Gibbs (1981) utilized the same methodology as Gibbs (1979) experiment, but instead of sentences varying in terms of literality and indirectness, they differed in terms of conventionality. Gibbs (1981) tested conventional and non-conventional indirect requests in varying story contexts, arguing that conventionality must be considered in context since there is no such thing as pure

conventionality. Though certain forms are clearly conventional (as the "Can you...?" construction for indirect requests), their conventional use differs as a function of situations and therefore so does the ultimate judgments of conventionality. In the 1981 work, Gibbs cites data that support that people find some conventional requests more conventional in some contexts than in others (e.g., "Can I have a parking sticker?" said in the campus parking office has a lower conventionality rating than "Can I have a beer?" said in the campus pub) and later distinguishes the features that make indirect requests conventional in certain contexts (Gibbs, 1986c). In the 1986 study, he found that people formulate requests to anticipate the potential obstacles in situations (e.g., ability, willingness, possession of desired object) and demonstrated that people strongly prefer indirect requests that address these sorts of obstacles in various situations.

In the 1981 experiment, Gibbs found non-conventional requests took longer to read and judge than conventional requests, when conventionality was defined by criteria similar to what would later appear in the 1986c work. In 1986c, he found that people process indirect requests that

address relevant obstacles faster than those indirect requests that do not. Overall, this can be interpreted to mean that people understand the meanings of conventional requests faster than the meanings of non-conventional requests.

Based on this finding, it could be possible that the results obtained in the original 1979 experiment were such because the target sentences used were conventional. Reconsidering the examples of target sentences, Gibbs used "Must you...?", a conventional form for stating indirect requests in both the literal and conveyed contexts. Though it is again difficult to determine the strength of this objection without reference to the complete stimuli, it is possible that the conveyed requests in context took less time to process than literal questions based on the conventionality of the examples used. Gibbs, however, argues against this possible conclusion stating the examples could not have been conventional as the results from context-free conditions show longer judgment times than for the conveyed conditions. Nonetheless, if the totality of Gibbs' (1981, 1986c) research on conventionality should be accepted, the utterances can only truly be judged conventional in a context. Therefore

results about conventionality without context would not be applicable to counter-arguing this explanation.

Regardless of how conventionality factors into the Gibbs (1979) experiment, it is clear that conventionality itself has an interesting effect on processing of indirect speech acts. Yet, the results of the Gibbs 1981 and 1986c experiments do not allow a conclusion about how conventionality is interpreted cognitively or whether the processing of conventional indirect speech acts offers support or refutation of the CDM. In order to fully flush out the role of conventionality in processing, Gibbs (1983) conducted two experiments and found that people do not always derive the direct meaning of conventionally indirect requests. Both experiments used a task that utilized two contexts (literal and indirect) where both ended in a prime sentence that could be interpreted literally (directly) or indirectly depending on the preceding context. The two experiments varied only in whether the type of prime sentence was a conventional or non-conventional indirect request in the literal condition. So, experiment one used the same prime sentences, conventional indirect requests, whereas experiment two tested a non-conventional indirect request in literal contexts against the conventional

indirect request in indirect contexts. Participants were asked to determine whether a paraphrase of the prime constituted a meaningful English sentence and their reaction time for making this judgment was measured. Two types of paraphrases were used that corresponded to a literal interpretation of the prime or an indirect interpretation of the prime. For control, two additional "paraphrases" were tested consisting of either an unrelated sentence or a nonsensical sentence. An example of the sort of stimuli used appears in Table 2.

Table 2
Example of Stimuli from Gibbs (1983, p. 526, 532)

Literal Context with Conventional Prime	*Indirect Context with Conventional Prime*
Rod was talking to his psychiatrist. He was having lots of problems 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?"*	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?"*

Non-Conventional Prime

"Is there no way to be friendly?"

Paraphrases

Literal: Are you unable to act friendly?
Indirect: Please be friendly to other people.
Unrelated: Running is excellent for the heart.
Nonsensical: The window move doesn't sash open.

The results of the first experiment showed subjects were faster to react to indirect paraphrases than literal/direct or unrelated paraphrases regardless of the context. Even in the literal contexts, indirect paraphrases were more quickly responded to. In the second experiment, literal paraphrases were judged faster than indirect paraphrases (and unrelated sentences) in the literal story-context, but indirect paraphrases were judged

faster than literal paraphrases in the indirect story-context. This result directly conflicts with predictions made by the SPM as traditionally conceived, since the SPM specifies that literal meaning is always necessarily derived in the understanding of indirect meaning and so would predict that judgments of literal meaning are always faster than judgments of indirect meaning. Instead, it appears to support a model like the CDM where people are argued to be able to directly access whatever the most appropriate meaning is from context. Since the typical meaning associated with conventional indirect requests is the indirect meaning, it is this meaning that is directly accessed from context.

In an experiment directly testing the adequacy of the SPM as applied to the processing of conventional indirect requests, Hirst, LeDoux, and Stein (1984) compared the ability of Broca's (or anterior) aphasics with right-brain damaged (RBD) individuals and normal controls in comprehending both the literal (direct) and non-literal (indirect) meanings of conventional indirect speech acts. Hirst, LeDoux, and Stein used Broca's aphasics since previous research revealed that these aphasics do not appreciate syntactical constraints in speech production,

but do demonstrate that they comprehend what is said to them in conversation.[9] Hirst, LeDoux, and Stein speculate this is because they are able to use their knowledge of the world and understanding of individual words to construct the meaning(s) a speaker intended. Therefore, Broca's aphasics provide an interesting subject pool for testing conventional indirect requests since:

> The syntactic difficulties of anterior aphasics suggest that they may not be able to parse a "Can you . . ." utterance as a question since it requires sophisticated syntactic competence to distinguish a question from a declarative sentence. It is possible anterior aphasics may use the context of the utterance to interpret a "Can you . . ." utterance, in which case they should correctly interpret the utterance as either a question or a request, depending on context.
>
> The interesting case, however, is if their ability to employ contextual constraints is not powerful enough to effect both interpretations. According to a three-stage model, if people cannot interpret a "Can you . . ." utterance as a question, either because they cannot parse it or use context to interpret it, then they should also fail to interpret

it as a request. (Hirst, LeDoux, & Stein, 1984, p. 28)

Right-brain damaged participants were used as a comparison group since language comprehension and production is usually not affected since language is usually controlled by the left-hemisphere.[10] Therefore, it was expected that RBD participants should perform similarly to the normal participants. However, Hirst, LeDoux, and Stein found that RBD participants were unable to use context in interpreting the meaning of conventional indirect requests, instead treating these requests as direct questions. Conversely, despite the predictions of a three-stage model, Broca's aphasics were able to interpret the request meaning of indirect requests, but were unable to comprehend the direct question meaning. This was taken to demonstrate that the SPM could not be correct since it should be necessary to compute literal or direct meaning before indirect meaning can be derived.

Then again, the results are not generalizable to all cases of indirection. Instead, we can only generalize to the case of the processing of conventional indirect speech acts. What this result seems to indicate is that the processing of conventional speech acts is a special

process. Right-brain damaged individuals appear to have lost their command of contextual and social cues and therefore attend strictly to the grammar and words of a sentence to interpret what meaning is intended. Left-brain damaged individuals, who have lost language appreciation, but retain contextual and social information, appear to rely on social conventions of use to understand the meaning of conventional indirect requests.[11] Therefore, these results only refute the SPM if the SPM is taken to mean that literal/direct meaning must be processed before indirect meaning in the case of *all* indirect speech acts. However, if the SPM were modified to allow short-circuited processing in the case of conventionalized indirect speech acts, then the results from neuro-pragmatics would be consistent with these results.

Research on children also provides some interesting results for the role of contextual interpretation and conventionality. In an investigation of how children understand indirection, Bara and Bucciarelli (1998) find some evidence in children that would support a model like the SPM. According to their research, children between the ages of 2 years and 6 months and 3 years have difficulty in understanding conventional indirect requests. Though Bara

and Bucciarelli use this result to support a different model (one concerned with development of pragmatic understanding in children), these results allow two interesting conclusions. First, combined with the results on research on conventionality, it appears that conventional indirect speech acts are truly a special case of indirection. How these types of acts are understood and processed is not generalizable to the processing of non-conventional speech acts and therefore does not allow conclusions about processing indirect speech acts in general. Second, these results can be taken to support the SPM. Since children fail to understand indirection, or to automatically compute it in some way when the meaning is non-conventional, indirection again appears to be a special, additional process that operates when literal or direct meaning does not fully capture context. This result indicates that understanding an indirect speech act generally requires an inference process that appears to be triggered by an initial calculation of direct meaning, but perhaps this process can be shortcut through repeated exposure and understanding of conventional cues.

This is also supported by research on autistic children. Work on the pragmatic comprehension processes of

autistic children reveals that children with autism only respond to the direct force of indirect speech acts, whether these indirect acts are conventional or non-conventional. For example, when autistic children respond to utterances like "Can you pass the salt?", they appear to work out whether they in fact possess the ability to pass the salt (therefore responding to the direct force of the speech act) and answer to this direct meaning (see, Bara, Bosco, & Bucciarelli, 1999; Firth, 1989). At least one interpretation for this result is that autistic children are typically uncommunicative and engage in significantly less social interaction than non-autistic children. This lack of social practice would indicate that they simply do not acquire conventional meanings associated with conventional indirect speech acts and without the acquisition of this additional meaning, process all indirect speech acts similarly - working first from direct meaning to interpret any indirect meaning.

Overall, it can be concluded that a conventional indirect speech act is different from a non-conventional indirect speech act in terms of processing. As a whole, the research appears to indicate, unsurprisingly, that the conventional meaning of a conventional indirect speech act

is socially learned, as can be concluded from the work on normal and autistic children, and that through conventional use, the conventional meaning is the one that is most associated with conventional indirect acts. These results refute the SPM as strictly conceived since the SPM does not make a distinction between types of indirection in its specification of processing steps. It also appears to tentatively support a model like the CDM, which would suggest that the meaning that is the most suitable in context is the meaning ascribed to conventional indirect utterances.

Questioning the CDM. Though the CDM has received some empirical support as demonstrated above, there are some problems with concluding that it is the correct model for specifying the processing of indirect speech acts. The largest problem facing the CDM is that it simply is not a fully worked-out model. To date, many researchers refer to a model like the CDM as being accurate in describing indirect speech act processing, but this usually appears only to stand in contrast to the SPM and nowhere does a complete rendering of this model appear. This of course means that the CDM is easily attacked, since many simple processing issues have never been addressed.

The most apparent of these issues, and a difficult criticism for the CDM to defend against, is that the CDM simply provides no mechanism for how listeners are able to derive meaning from indirect speech acts. This is sharply contrasted with the SPM that derived its processing stages from theoretical pragmatics. Without this sort of backing, or at least the proposition of other sorts of conditions of how speech act meaning is determined and understood, it is an under-informative model. First, since the CDM suggests that any meaning of an indirect speech act, direct or indirect, or both, can be accessed directly from context (because the meaning with the strongest activation can be chosen as the meaning of an utterance), it is not obligatory that more than one meaning of an indirect speech act is derived in context. This renders the concept of indirection superfluous. Since it is not essential that a listener interpret that a speaker means more than he or she says, the listener can always choose to interpret simply what the speaker said, or perhaps something different from what they said, but will not necessarily have to compute both what was directly and indirectly meant. This of course makes speech act theory a highly subjective matter, one where the meaning of an utterance is whatever meaning

the listener, on any given occasion, ascribes to the utterance. With no criteria for interpretation provided, listeners would have the option of constructing whatever meaning is most salient to them in whatever moment; meaning speech act theory would need to be reconstrued as a theory of personal meaning. This is clearly at odds with all the theoretical work underlying speech act theory and also lacks any sort of empirical or experiential basis.

Likewise, the ability to access only one meaning ignores the fact that direct meanings can be important to the determination of indirect meanings. For example, Searle (1979) suggests that the precise way in which an indirect meaning is selected is by reference to how the direct act fulfills the indirect act felicity conditions. So, when a listener understands "Can you pass the salt?" they use the question content that concerns listener ability to infer that the speaker is asking about a prepatory condition for requesting, meaning that if the listener has ability he or she also meets the conditions for requesting. So, "Can you pass the salt?" is interpreted as an indirect request while still existing as a direct question. A similar example that is a bit less conventional, such as "Are you willing to go to the

store?", also illustrates this. In this case, the indirect request can be determined by reference to another of the prepatory conditions for requesting, willingness (the condition that H wants to do A), in order to determine the indirect request meaning.

Even if one rejects Searle's explanation of how indirect acts are determined, the use of direct meanings in determining indirect meanings has been demonstrated empirically. Experiments testing the politeness of indirect requests revealed that it is the direct meaning of the request that determines the level of politeness for the entire indirect act (Clark and Schunk, 1980). So, deriving direct meaning is important for understanding politeness and if the CDM does not guarantee the possibility of activating more than one meaning, then politeness phenomena would be a major anomaly. Therefore, the CDM must be rejected as not explanatory.

Of course, it could be argued that the CDM will allow the construction of multiple meanings, therefore rendering the above objections irrelevant. Yet, even when more than one meaning can be accessed, it is still the case that no explanation is given for how these meanings will be selected or why. There has never been a clear

specification in the CDM of how meaning is selected, beyond descriptions that indirect meaning can be directly accessed, so the criteria by which meaning is selected, a relatively major concern for any processing model, is an open question. Also, the ability to specify multiple meanings does not solve the problem of determinations of indirect meaning relying on direct meaning. Though perhaps it can explain how the politeness of indirect acts are determined, since the argument that the politeness of an indirect act is based on the content of the direct act does not necessarily require a direct act to be accessed first, it cannot deal with the theoretical issues of the priority of direct meaning. The necessity of direct meaning in understanding indirect meaning is apparent in Searle's account as described above, but is also found in other major theories of speech acts and theories utilizing speech acts as a backing (see, e.g., Alston, 2000; Bach and Harnish, 1979, on speech act theory; van Eemeren & Grootendorst, 1983, on applied speech act theory to argumentative discourse).

Using the Bach and Harnish (1979) theory to illustrate, the mutual contextual beliefs used for calculating direct speech acts play two parts in the

calculation of indirect speech acts. First, they trigger the inference process of searching for indirect speech act meaning, highlighting that the direct speech act cannot be the sole act the speaker performed in context. Also, they are used to contribute to the identity, with Gricean principles, of the indirect speech act. So, even if Searle's account is problematic in some way, abandoning the role of direct acts as necessary for the computation of indirect acts is highly troublesome for many theories of indirect speech acts.

Because of this lack of specification, the CDM encourages the same sort of criticism that is applied to the connectionist architecture it assumes. Connectionist theories have often been criticized as modern day behaviorist accounts, where a process occurs in the black box of cognition, but no account as to what that process is is ever given (see, e.g., Townsend & Bever, 2001). This seems true in the case of the CDM, where nothing but magic stands currently as an explanation for how speech act meaning is derived. It is particularly this objection that makes accepting the CDM seem premature.

However, surely there are some who would argue that this is not the only way to explain how the CDM allows the

interpretation of meaning. So far, I have argued against the CDM by casting it as a selection model, where all meanings are activated and then the one (or ones) most appropriate to context is (are) selected. Still, it is possible to view the CDM as a construction model instead where the potential meanings of an utterance are created from context. Here, context does not simply provide the "criteria" for selection of meaning, it allows the determinations of possible meanings. So, on this sort of account, meanings are not simply activated and then selected, but the meaning is constructed out of context.[12] This allows a clearer specification for how meaning is understood when theories of speech acts are filled in and also allows the restriction of the problem space, since no longer are all possible meanings considered, only those relevant to context. It would appear that a specification of felicity conditions or mutually understood beliefs would be possible in this sort of CDM. To illustrate, "May I remind you your account is overdue?" could be directly understood as a reminder, given that it fulfills all the presuppositions/felicity conditions for reminding, fits in context, and even its conventional form indicates a primary indirect meaning. So, a reminder is constructed from

contextual information and meaning is therefore theoretically motivated in this account.

This would apparently solve at least two major problems identified so far in the CDM. The possible application of theory renders the objection that the CDM is atheoretical inconsequential and the addition of restriction of problem space potentially removes both the explicit criticism that the CDM allows a theory of personal meaning and a corresponding assumption that there is no limitation of the sort of utterances that could be considered in a context. However, this solution is only superficial, since the primary objection to the CDM is that CDM does not make the interpretation of indirect utterances reliant on the interpretation of direct ones. Even under this construction, direct meaning is still not necessarily computed and therefore even this rendering of the CDM is open to the attack that indirect meanings receive at least some of their interpretation from interpretations of direct meaning.

Finally, there is no clear empirical evidence supporting the CDM. A review of the research presented so far only indicates that the SPM as strictly conceived is incorrect since conventional indirect speech acts appear to

not be processed as the SPM would predict. However, the SPM's failure does not allow the conclusion that the CDM must therefore be the correct model. In no experiments presented yet has the CDM been directly tested, and in the experiments that could allegedly support such a model, for example, Gibbs' 1979 experiment, the results do not indicate the CDM is correct since it took listeners longer to judge literal meaning in context than indirect meaning. Without clear predictions, since again, the mechanisms ruling the determination of speech acts in the CDM is missing, it would seem most likely the CDM would have predicted no differences in the processing time for direct and indirect acts. However, this is not what occurred. Given the theoretical problems in this model, combined with lack of direct empirical support, it seems unwarranted to accept the CDM as the best model for describing indirect speech act processing.

An Alternative Model

Given that there are serious problems with accepting either the SPM or CDM, the former based on inconsistent research, the latter on both problematic research and theory, it seems obvious that some sort of alternative model is necessary to adequately describe the processing of

indirect speech acts. Such a model was suggested by Shapiro and Murphy (1993) and is meant to reconcile the conflicting results and problematic nature of both traditional models. Their single meaning parallel model (SMPM) is a weaker version of the SPM, where, like the SPM, in the processing of an indirect act both direct and indirect meanings are derived, but unlike in the SPM, the processing indirection begins with the determination of a "best meaning" in context, whether this meaning is direct or indirect. The idea of a best meaning can be sensitive to issues of conventionality, since the best meaning of a conventional indirect request could be the request meaning, therefore the SMPM could account for what the SPM has failed to account for and what the CDM cannot explain. The model is still not fully developed, but early research does seem to provide some support for it.

In a series of experiments, Shapiro and Murphy tested the adequacy of three models of the processing of indirection: the SPM (which they denote as a serial model) the CDM (called in their experiment the parallel model), and the SMPM (also known as the centrality hypothesis).[13] In the first experiment, participants were trained to tell the difference between direct and indirect meaning and then

asked to judge whether a series of sentences had a plausible direct meaning. A set of 48 sentences was used representing 4 stimulus conditions: plausible direct meaning/implausible indirect meaning (e.g., "Is a penguin a bird?"); plausible direct meaning/plausible indirect meaning (e.g., "Do you have any money?"); implausible direct meaning/plausible indirect meaning (e.g., "Can I offer you a drink?"); and implausible direct meaning/implausible indirect meaning (e.g., "Will your wall go home for the holidays?"). In the second experiment, story-contexts preceded the judgment of these 4 types of sentences.

The experiments were mirrored after the procedure used by Glucksberg, Gildea, and Bookin (1982) in an experiment testing the processing of metaphor. In the metaphor experiment, participants were asked to judge the literal truth and falsity of metaphoric statements and the hypothesis tested and supported was that the presence of plausible metaphorical meaning would slow the judgment of literal meaning, demonstrating that the computation of metaphor was not conducted by a model like the SPM.[14] Using that result, Shapiro and Murphy sought to determine whether the presence of indirect meaning interferes with the

comprehension of direct meaning, whether direct meaning is computed before indirect meaning, and whether indirect meaning can be ignored when readers/listeners attempt to do so.

To test this, they compared the predictions by the three models. According to the SPM, literal meaning (here, direct meaning) must be computed before indirect meaning. Therefore, indirect meaning should not interfere with the computation of literal (direct) meaning. So, if this model was correct, Shapiro and Murphy would expect no differences between mean response times for judgments of the presence or absence of direct meaning for the +D/+I and +D/-I conditions (which received positive responses) or between -D/+I and -D/-I conditions (which received negative responses).[15]

Contrary to this prediction, if a model like the CDM were correct, results should indicate that there would be a slow-down in deciding whether direct meaning is plausible in situations where indirect meaning is also present. This should be the case since the CDM posits that listeners decide among all possible meanings of an utterance or sentence and so, when more than one meaning is present, it should require processing effort to determine which of

these is the direct meaning.[16]

Finally, Shapiro and Murphy put forward the predictions of their own model arguing that since direct meanings are obligatorily derived, but do not necessarily get processed before indirect meanings, indirect meanings will be ignored without context to support them. Therefore, they make a prediction that mirrors the prediction of the SPM in that the presence of an indirect meaning should have no influence on the response time associated with the presence of direct meaning judgments.[17]

The results of the first experiment were consistent with the CDM. It took significantly longer for participants to judge whether a sentence had a plausible direct meaning in the conditions where an indirect meaning was also plausible. It also took participants longer to judge whether a direct meaning was plausible when indirect meaning was also plausible than to judge whether direct meaning was plausible when no indirect meaning was plausible.[18]

Shapiro and Murphy entertain a competing explanation, one that would not necessarily support the CDM, and that is that the sentences used in the plausible direct meaning/plausible indirect meaning (i.e., +D/+I) category

were conventional, therefore causing the increase in processing time for that category when compared to the others. Since previous research has demonstrated that listeners access the indirect meaning of conventional indirect requests before direct meaning, the determination of direct meaning for conventional indirect requests should mirror a process of determining indirect meaning for non-conventional indirect utterances. This means that it should take longer to judge sentences where both direct and indirect meanings are plausible (i.e., +D/+I) than where the direct meaning is plausible and the indirect meaning is implausible (i.e., +D/-I).

Shapiro and Murphy dismiss this counter-explanation by arguing that the research has not conclusively demonstrated that direct meaning is hard to derive or interpret in the processing of conventional speech acts. While Shapiro and Murphy are correct on this point, the real issue is whether the research has shown that conventionality could provide an explanation for why direct meaning takes longer to judge in cases of processing conventional indirect speech acts. From the work of Gibbs (1983), the result is clear that processing the direct meaning of an indirect request takes longer than processing the indirect meaning, overall

leaving the conventionality explanation as a plausible account for the Shapiro and Murphy result in their first experiment.

The second experiment more clearly tests the SMPM than the first since it included utterances in context. In this experiment, participants were asked to place themselves in the role of a character in a story-context and asked to respond yes or no to a question asked to them by the other character in the story context. Each participant saw 20 story contexts and answered one question about each. The questions represented the same 4 types of stimulus condition used in experiment 1. An example of the story contexts and the questions are presented in Table 3.

Table 3
Example of Story-Context and Stimulus from Shapiro and Murphy (1993)

Terry took Kathy to see "Madame Butterfly" at the opera house. The two women were mesmerized by the performance. Kathy was glad that she had remembered enough Italian to understand the story. She thought she had never heard anything so beautiful. When the show was over, she wanted to see more. On the way home Terry asked her,	
+D/+I	Would you like to see another opera?
+D/-I	Did you understand the opera's plot?
-D/+I	Can I invite you to see another opera?
-D/-I	Did you see the opera "Madame Butterfly?"

Shapiro and Murphy made the following predictions based on the three models. According to the SPM, a question that has a plausible direct meaning should be responded to more quickly than a question where there is no plausible direct meaning (i.e., using the Shapiro and Murphy notation, +D/-I faster than -D/+I). According to the CDM, since direct and indirect meanings are computed simultaneously, but are accessed independently, it should take longer to respond when more than one plausible meaning is possible. So, again using the Shapiro and Murphy categories, +D/+I should be slower than +D/-I or -D/+I. Also, Shapiro and Murphy predicted that the response times in +D/-I should not differ from the response times in -D/+I since the CDM predicts there is no preference to either direct or indirect acts and that both are computed as part of a single package. Finally, the SMPM would predict that since a single best interpretation is derived from context (and there is no bias towards direct or indirect meaning since people choose most plausible meaning), +D/-I should be similar in response time to -D/+I, but importantly the +D/+I should take no longer to respond to than +D/-I or -D/+I because the most plausible choice will be considered first.

The results were taken to indicate the SMPM was the correct model since no differences were discovered between any conditions. However, as with the other experiments, there are reasons to question this result. Referring again to Table 3, and without access to the all the experimental materials, the plausible direct meaning/plausible indirect meaning sentence could easily be read as a direct question and not one where an indirect invitation was involved.[19] If the stimulus items from this condition all work in this way, then the lack of differences in response times for answering the question could be attributed to participants always reading direct meaning, even in the plausible direct and indirect meaning category. In other words, participants could be giving the most superficial reading possible. Unfortunately, the responses given by the participants offer no clue as to the meaning that they responded to, as a yes response in any condition could indicate a response to the direct or indirect meanings.

Additionally, it is possible that the experimental task used by Shapiro and Murphy in both experiments biased the results. They report extremely low error rates for incorrect categorizations, and while this can be a function of the stimuli exactly representing the experimental

conditions, it may also be the case that the instructions given to the participants were so particular as to allow conclusions only about the effect of the instructions (can the participants categorize as told?) and not to how they actually understand speech acts. By this I mean to suggest that the participants could have been trained in such a way that their categorizations were not based on understandings of speech acts, but were instead were based on some sort of training effect where participants learned the correct responses to make (e.g., tacit learning of appropriate responses to examples from the various categories).

Finally, there is yet one more criticism of the SMPM. Notice that though the SMPM is a revision of the SPM, it restricts the interpretation of the meaning of indirect speech acts to a listener obtaining one meaning. As in the criticism of the CDM, this is not only at odds with speech act theory, but with all cases of indirection where more than one act must occur. To illustrate, it is unclear how the SMPM would explain an example like "Can you tell me the square root of 10?" where both a direct and indirect meaning are likely to be intended. A better specification of the SMPM would be that a listener does not derive only a best meaning from context, but first derives that meaning.

However, that is not exactly what the SMPM proposes.

Therefore, it is too early to accept the SMPM, or a model like it, as the superior model for explaining the processing of indirect speech acts. Empirically, since the results of the first Shapiro and Murphy (1993) experiment can be explained by conventionality of some stimulus items and the second by responses to direct meaning, and both by simply reflecting that participants are good at following directions, the conclusions made by Shapiro and Murphy must be cautiously interpreted. As it stands, they certainly do not seem to indicate unequivocally the superiority of this model. Also, since the SMPM makes predictions that only one meaning is interpreted by listeners, this can be problematic when more than one meaning is present. Overall then, it is difficult to accept the SMPM as the correct model for explaining the processing of indirect speech acts.

Conclusions of Empirical Work

Overall, the results of all of the empirical work do not conclusively support any of the major models for the processing of indirection. Likewise, these results do not appear to fully discount any of the models suggested by scholars. As discussed, methodological problems, competing

hypotheses, unwarranted conclusions, bizarre findings, and the like all contribute in some way to the murkiness of the descriptive account of indirect speech act processing. Despite these issues, however, there are some conclusions that can be derived from the empirical work that, if they do not completely point to a particular model, indicate what a model of the processing of indirection must account for.

Processing non-conventional indirect speech acts.

Overall, the results from Clark and Lucy (1975) and Gibbs (1979) demonstrate that the processing of non-conventional indirect speech acts without context takes longer than the processing of direct speech acts without context. Two general conclusions about the processing of non-conventional indirect speech acts without context can be made. The first is when indirect speech acts are presented without context, the direct and indirect meanings of speech acts are determined and interpreted in reference to sentence form. While this result appears to conflict with an account of speech acts that dictates that more than sentence form is needed for determination of meaning, it really does not. Since recognizing speaker meaning from felicity conditions or mutually understood beliefs in a

situation where there is no context is by definition impossible, listeners should rely on some other strategy. In these cases, it appears they are using sentence form as an illocutionary force indicating device and according to an account of speech acts that relies on the use of felicity conditions or mutually understood beliefs, the listeners do as they should. Since without context they cannot determine felicity conditions they use typically associated sentence form to give the probable direct and indirect forces.

Hirst, LeDoux, and Stein's (1984) research on right brain-damaged patients also indicates this interpretation. Since these patients lacked the ability to interpret contextual cues but retained the ability to interpret syntactic and semantic cues, their reliance on sentence meaning to indicate illocutionary force demonstrates that without context (or contextual processing ability), sentence meaning provides illocutionary force. Second, it is clear that as long as direct speech acts are interpreted under these restricted conditions, at least the results of the Clark and Lucy (1975) experiment bear out that the literal/direct meaning of a sentence is understood before any indirect meaning. Again, this account is consistent

with speech act theory and provides modest empirical evidence for the existence of illocutionary force indicating devices (see also, Clark, 1979).

There is very little one can conclude about the way non-conventional speech acts are processed in context. Unfortunately, most experiments that have made conclusions about indirect speech acts in context seem to have truly tested only conventional speech acts. Therefore, determining whether or not direct speech acts must be processed before indirect speech acts in non-conventional cases remains an open question. Any model of the processing of indirect speech acts, or some other heretofore unimagined possibility, may be correct. Contrary to conclusions made from some research, it is certainly not the case that the SPM has been disproved for these cases. Yet, the results of the processing of conventional speech acts do call a strict interpretation of this model into question.

Processing conventional indirect speech acts. In situations where the indirect speech acts are conventional there is evidence to conclude that the meaning of the indirect speech act is processed or understood before the meaning of the direct speech act, at least in normal

adults. Taken in conjunction with the research from neuroscience and child development, it is possible to conclude that the processing of conventional speech acts is a special process. As demonstrated in the work from cognitive neuroscience and child language acquisition, the meaning of conventional speech acts appears to be based on learning conventions of the language community and not on standardizing a rational calculation of meaning. Additionally, the evidence from Hirst, LeDoux, and Stein (1984) can be taken to demonstrate that this sort of knowledge is exclusive of knowledge of sentence meaning.

This does appear to disprove the adequacy of the SPM as originally proposed. Though it may be that conventionality is special, the model outlined by Clark and Lucy does not allow for the processing of any meaning but direct meaning first. However, it could be that a modification to the SPM, accounting for conventionality, would be all that is needed to make this model accurate in describing indirect speech act processing, not a rejection of this model outright. The modification would be that the SPM accounts for the processing of non-conventional indirect speech acts as it stands, but for the processing of conventional indirect speech acts, the direct meaning

tested for sufficiency against context could be the conventional meaning. This is a substantial modification of the SPM, but one that could be justified by proposing that the processing of conventional indirect speech acts involves a cognitive a short-cut (Bach & Harnish, 1979). The indirect conventional meaning of certain speech acts is so associated with the total meaning of these acts, a point that is proven by the research on conventionality and also by Clark (1979), that it appears listeners respond primarily to the indirect meaning of conventional requests. If so, then it could be that listeners skip the usual process in checking a direct act against context for sufficiency and instead use the indirect meaning unless this meaning appears not wholly explanatory in context. On this view, certain conventional forms would be so highly associated with certain indirect meanings that what would be indirect meaning would be basically direct.

At this point, it may be useful to introduce new terminology in describing speech acts to distinguish theoretically necessary categories from processing categories since my categorization of an indirect act as direct can be problematic and confusing. Obviously, from an analytic account, it is important to maintain a

distinction between direct and indirect acts within all utterances. Since, from speech act theory, an indirect act possesses two meanings, we can call these meanings logical direct (l_{direct}) and logical indirect ($l_{indirect}$) meanings. Taking a conventional example to illustrate these meanings, in "Can you pass the salt?", the l_{direct} meaning would be the question meaning and $l_{indirect}$ meaning is the request meaning, assuming an ordinary context.

These meanings can be contrasted with direct and indirect meanings from a cognitive account, the two possibilities considered here as c_{direct} and $c_{indirect}$. In "Can you pass the salt?" if the conventional form allows short-cutting of normal processes or is a special case, then we could consider the request to be a c_{direct} act and the question to be $c_{indirect}$. Here, a listener would only take the $c_{indirect}$ act as plausible if the c_{direct} act was deficient in context (Clark, 1979). Notice though that these distinctions allow the preservation of theoretical categories and posit only a special use of terms for direct and indirect speech acts in processing.

If this is the case, then the SPM can be preserved by substituting c_{direct} and $c_{indirect}$ for the original l_{direct} and $l_{indirect}$ categories. This would mean that the SPM now would

read as: first calculate the c_{direct} meaning of an utterance (for example, this could be an l_{direct} meaning in non-conventional cases and $l_{indirect}$ in conventional cases). Next, determine whether the c_{direct} meaning is plausible in context. If it is, decide of c_{direct} as the plausible meaning of the utterance. If not, begin the search for a plausible $c_{indirect}$ meaning (for example, $l_{indirect}$ meaning in non-conventional utterances or l_{direct} meaning in the cases of conventional utterances).

It should be apparent that the sort of modification suggested above makes the SPM almost indistinguishable from Shapiro and Murphy's SMPM. Since the modification to include special processing, at least, of conventional utterances within the SPM suggests that the first accessed meaning is $l_{indirect} = c_{direct}$, this is akin to proposing a best meaning is derived in context first, the central feature of the SMPM. This is not surprising as the SMPM was designed as a modification of the SPM. However, it is important to distinguish the difference between the SMPM and this modified SPM. Remember, the SMPM appears to assume that a single best meaning is derived from context and this is problematic in cases where more than one meaning is possible. So, it is best to think of the recent

modification to the SPM as its own model, what could simply be called the Modified Standard Pragmatic Model (henceforth called MSPM).

Where do we go from here? The results of the review of the empirical work demonstrate that the SPM, as originally conceived, is an untenable model. However, a modified version of the SPM, in the form of the MSPM, may be likely. The review also highlights the sort of issues that must be tested in order to demonstrate what sort of model is being utilized in the processing of indirection. First, the role of processing non-conventional speech acts in context must be determined in order to support any given model. Currently, either the SMPM or the CDM may be correct, as there is no clear support either way - as could the revised MSPM. Second, the role conventionality plays in the interpretation of conventional indirect speech acts must be defined specifically. Presently, several possibilities exist for the processing of conventionality. These issues provide the basis for the research questions addressed by a series of experiments presented in the next chapter.

Chapter 3 Notes

[1] However, this expansion to all sorts of non-literal meaning is not wholly unwarranted since Clark and Lucy (1975) describe the model as applying to any "conversationally conveyed meaning" (p. 56), which of course could include a wide range of language phenomena.

[2] These different conditions were meant to represent different ways that speakers can make indirect requests based on Searle's felicity conditions for requesting. Searle's (1969) felicity conditions have been criticized for not being able to distinguish different speech acts from each other and only covering the paradigm cases of speech acts. As Thomas (1995) illustrates through case studies of warning and apologizing, the rules proposed by Searle as too over-specific to provide a description of the everyday uses of these speech acts -- and to attempt to cover normal usage results in conditions that are "hopelessly complex, vague and unworkable" (p. 102) -- and too general since they include cases that should not be included. This is in addition to other major criticisms such as the accusation that Searle's rules are circular (Thomas, 1995) and are only a description of the semantics of performative verbs, not a pragmatic account of speech acts (Levinson, 1983).

Nonetheless, though Clark and Lucy do test indirect acts determined by different sorts of Searlean felicity conditions (e.g., requests derived from sincerity conditions), the results are not discussed in terms of felicity conditions or in any way are meant to verify that Searle's felicity conditions are correct. Instead, here, it is fairly clear the felicity conditions were used only to specify some pragmatic conditions in order to increase the variability of messages to ensure generalizability for requests as a general type.

[3] There was also a third prediction in the original experiment: The listener should show evidence that his or her final representation of a sentence was its intended meaning. As far as testing the SPM goes, this condition basically serves as a control to check whether participants understood the literal and conveyed requests. However,

Clark and Lucy also used this prediction to verify an earlier model suggested by Clark and Chase (1972), which is not directly relevant to the discussion here.

[4] Comparisons of one set of declarative/interrogatives showed declaratives were evaluated true or false 326 msec faster than interrogatives and for the other set of declarative/interrogatives, declaratives were evaluated true or false 268 msec faster than interrogatives.

[5] Although Clark and Lucy do concede that differences in response times between interrogatives and declaratives could be due to factors such as: 1) interrogatives could take longer since their literal interpretations are difficult to construct (interpreted as consistent with prediction 1); 2) interrogatives take longer since it is more difficult to deduce conveyed meaning when given an interrogative form (interpreted as consistent with prediction 2); 3) that perceptually interrogatives are more difficult to process because of the "unusual" sentence structure which would slow-down left to right perceptual parsing of an interrogative sentence (interpreted as independent of present model); and 4) that the literal meanings of the sentences (both for declaratives and for interrogatives) are ambiguous in that they could point to two literal meanings (e.g., "I would love if you colored the circle blue" could both literally be interpreted as an assertion and a request) and the slow-down in response times for interrogatives is simply because a request reading is less accessible for interrogatives than declaratives. This last possibility would not be consistent with Clark and Lucy's model, though they reconcile this by arguing most of the possible reasons are consistent with the theory, so it is warranted to assume this result supports the standard model.

Despite the claims regarding interrogatives, it was still the case that in the experiment the mean for indirect requests where the direct act was not a question are larger than the mean for direct acts, therefore supporting the SPM. For example, the sentence "You should color the circle blue", direct advice, is slower to process than the fairly direct request, "Please color the circle blue". This pattern was also apparent in the examples: "I would

love to see the circle colored blue" (assertive/constative/representative expression of desire/wish); "The circle really needs to be painted blue" (assertion); and "I'll be very happy if you make the circle blue" (assertive/constative/representative).

[6] Gibbs himself never outlines this model, choosing instead to refute the SPM. However, he is committed to a model like this to the extent that he argues the processing of indirection is not a special process, that it occurs as the processing of normal language, and through the descriptions he gives of language processing in his 1994 work Poetics of Mind.

[7] This sort of model can be compared to connectionist or interactive models. Within psycholinguistics, compare to the TRACE model of speech perception (McClelland & Elman, 1986), the interactive activation model of visual word recognition (McClelland & Rumelhart, 1981), or Dell's parallel model of linguistic planning (1986, 1988).

[8] The mechanisms by which a listener arrives at or settles on the most active meaning is an issue that is not fully specified in the work utilizing the SPM, so it is difficult to specify here how a particular meaning is either activated or judged as stronger than other potential meanings. However, for the purposes of discussion, it could be that some sort of conversational rules or maxims dictate the selection of meaning. Using Clark and Lucy's (1975) description of the conversational postulate "If S questions L's willingness to do something when in fact L's willingness is not in doubt, then S is requesting L do something" guiding the interpretation of "Would you mind closing the door?", the CDM would suggest that both a literal or direct rendering and the indirect rendering are available to the listener when the listener attempts to comprehend this utterance. In this example, a listener would have both "S asked a question regarding whether or not I would object to opening the door" and "S is requesting me to open the door" available as potential meanings. Perhaps by using the suggested conversational postulate, the question meaning is rendered unlikely and therefore becomes less active than the request meaning.

Therefore, the listener should comprehend "Would you mind closing the door" as a request. In this way, what is considered direct or indirect from this descriptive perspective is somewhat irrelevant. The primary concern for this sort of model is what meaning is obtained and that the direct or literal meaning (here, the question) is simply not needed for comprehending the request.

[9] A Broca's aphasiac cannot produce complete sentences when reading or writing. Though they can retain the meanings of individual nouns and verbs, they lose appreciation of grammar and lose the use of pronouns, articles, and conjunctions. It is characterized as a "non-fluent" aphasia since the production of speech (and writing) is very difficult. Carroll (1999, p. 335, citing Goodglass & Geschwind, 1976) provides the following example of speech from a Broca's aphasiac: "Yes ... ah ... Monday ... er Dad and Peter H ... (his own name), and Dad ... er hospital ... and ah ... Wednesday ... Wednesday nine o'clock ... and oh ... Thursday ... ten o'clock, ah doctors ... two ... an' doctors ... and er ... teeth ... yah."

[10] For both the descriptions of Broca's aphasics and right-brain damaged individuals, right handedness is taken as given in their experiments since research has indicated that the typical division between left brain as language center and right brain as governing emotions, spatial perceptions, judgment, concentration, and nonverbal communication, is associated with right hand dominance.

[11] At least one of these social conventions appears to be the expected conversational slot where the conventional utterance appears. Following a conversational analytic approach, this could concern how the role of pre-sequences or activity types (Levinson, 1979; Sacks, Schegloff, & Jefferson, 1974), insertion sequences (Sacks, 1995), and general conversational organization (Labov & Fanshell, 1977; Mey, 2001) allow hearers to capture elements of what a speaker means.

[12] This account fits nicely with theories of speech acts where meaning is considered to emerge fully from conversation, like Labov and Fanshel's (1977) account of

speech acts. On their account, any act can have a host of illocutionary forces and these forces come from conversation. As discussed by Labov and Fanshel (1977), "conversation is not a chain of utterances, but rather a matrix of utterances and actions bound together by a web of understanding...In conversation, participants use language to interpret to each other the significance of the actual and potential events that surround them and to draw the consequences for their past and future actions (p. 29). Explaining this via a construction view of the CDM, context, the conversation, allows the creation of understanding any utterances in the conversation. So, meaning is constructed from context, the overall conversational structure.

[13] The linking of the SPM with serial models of processing may not be fully warranted. Though Clark and Lucy did suggest that the processing of indirect speech acts occurred in stages, there is no reason to think that features of parallel models could not be incorporated into the SPM. For example, there exists the potential to allow retracing of steps, a feature of parallel models, or at the ability that at any individual stage input may be received from other stages (or, processes) within the model, another feature of parallel models. Therefore, processing of indirect speech acts within the SPM could conceivably take place in a parallel-like fashion (see, Townsend & Bever, 2001, for an example of a stage model with parallel features in the case of sentence processing).

[14] Since the SPM, or a model like it, would suggest that literal meaning is the first computational stage, the presence of any sort of additional meaning should not be computed until it is determined necessary in context. In the Glucksberg, Gildea, and Bookin (1982) experiment, since the participants were asked to judge literal truth and falsity, the slow-down in processing sentences that contained plausible non-literal meaning was taken as evidence that the computation of non-literal meaning is automatic, interferes with processing literal meaning, and overall then demonstrates literal meaning is not the first stage in processing metaphor.

Though not directly relevant to the processing of indirect speech acts, the Gildea, Glucksberg, and Bookin (1982) conclusion that the processing of metaphor is automatic could actually support a model like the SPM. If it is an automatic process, it would be impossible to stop the process, meaning that the result would not really indicate that literal meaning wasn't being utilized, just that it was impossible to stop the non-literal interpretation from also being processed. One would expect a slow-down then in judgments of literal meaning in such a case.

[15] This assumes, of course, that the evaluation of whether or not a sentence has a plausible direct meaning is something that can be done before utterance meaning is computed. That is, it assumes subjects are capable of stopping themselves from looking for indirect meaning.

[16] Notice that this assumes that this is a selection process, not a construction process -- which is only one version of the CDM.

[17] However, this prediction seems faulty in that it could be that the SMPM equally predicts the results to follow the predictions made by a model like the CDM. Since there is no expectation of processing priority for either direct or indirect meaning, if indirect meaning is processed first, it could be predicted that this would slow-down the comprehension of direct meaning. So, in the experimental context, the judgments for direct meaning plausible (i.e., +D/-I) would take longer when indirect meaning was also plausible (i.e., +D/+I). In either case, this first experiment does not appear to be a direct test of the SMPM since the predictions of this model do overlap with predictions of other models, but is interesting from the perspective of comparing the SPM and CDM.

[18] Shapiro and Murphy also ran a follow-up experiment to guarantee the sentences actually represented the stimulus categories and differences between the categories were not due to extraneous variables like content or vocabulary. In this additional experiment, a different set of participants judged the stimulus material and some filler material for

grammaticality. It was expected that there would be no differences in the conditions, providing grammar or vocabulary was not an issue in the first experiment. Though the implausible direct meaning/implausible indirect meaning condition took longer to judge, Shapiro and Murphy interpreted this as showing the subjects found this condition pragmatically bizarre and processed it slower than those sentences that make sense. Overall, it was concluded that the results of the additional experiment demonstrate that differences in experiment one could not be due to difficulty of content or vocabulary.

[19] It could also be read as a pre-request, where a listener would hear the request is coming up, but this isn't it yet. These pre's project the direct act in the offing, but they themselves are not indirect -- so, it is possible hearer's hear the request coming up, and respond to that, and not to anything to do with the direct or indirect nature of the speech act.

CHAPTER 4

THE PROCESSING OF INDIRECT SPEECH ACTS: EXPERIMENTS AND RESULTS

As discussed in preceding chapters, the theoretical criticism of the SPM does not serve to adequately dismiss that model. However, results from the empirical work on the processing of indirect speech acts do indicate that the SPM cannot be accepted in an unmodified form. Therefore, in attempting to answer the question of how indirect speech acts are processed, at least three candidate models stand out for empirical testing: the SMPM, the CDM, and the revised SPM, what I called the MSPM. Additionally, the review of the empirical work in chapter 3 indicates that these models can be tested relative to a series of questions still unsatisfactorily answered in the extant work. Specifically, two research questions can be posed at this point.

RQ1: How are non-conventional speech acts processed in context?

RQ2: What effect does conventionality have on the processing of indirect speech acts within a model like the MSPM?

Two experiments were conducted that attempted to

answer these research questions. The first experiment was concerned with the first research question. In this experiment, the time it took participants to react to a categorization of an indirect speech act, presented in context, was measured. For example, after seeing the target "Carrots are good for you" said by a character in the text, participants read a phrase like "John ignored Betty's advice" which served as the categorization of the target sentence. The reading/comprehension time for each characterization of the meaning of the target utterance was the primary measure of interest. In this experiment, contexts were designed to make both a direct or an indirect reading of the target utterance plausible and only non-conventional indirect speech acts were used to avoid problems in confounding c_{direct} with $l_{indirect}$ meanings.

As discussed in Chapter 3, several sorts of models are possible for explaining the processing of indirect speech acts, though the design of experiment 1 only truly tests two competing models: the CDM and MSPM. The SMPM was excluded for two reasons. First, in its current form, it is an implausible explanation for processing indirect speech acts since it discounts the possibility of obtaining multiple meanings. Second, even if one takes the most

charitable interpretation of the SMPM, and allows for the calculation of multiple meanings, then the SMPM becomes indistinguishable from the MSPM. This of course means that only one version needs to be tested. To be clear, I choose the MSPM since it is proposed as a revision to the SPM and does not need additional clarification regarding the role of interpretation of multiple meanings.

In experiment 1, where contexts point equally to direct and indirect target utterance interpretations, the MSPM predicts that direct speech act categorizations should be comprehended faster than indirect speech act categorizations. This prediction follows from the MSPM's reliance on the SPM's explanatory mechanisms in the case of non-conventional indirect speech acts. Therefore, if the MSPM is correct, a direct act must be computed before an indirect act and so, if a context does not privilege an indirect interpretation, a listener should compute the direct meaning of an utterance until context indicates an additional interpretation is necessary (in this experiment, when the participant is asked to read a characterization of the indirect act). Since context has not been created to block an indirect reading of a target utterance, meaning this interpretation is also sensible, it should take

participants longer to determine whether an indirect speech act was intended since the mismatch in target utterance and context is what suggests the indirect meaning. The CDM, on the other hand, would predict no differences between the comprehension of direct and indirect speech acts since context would make either interpretation possible. In other words if meaning is directly accessed from context a direct or an indirect reading would be equally possible from a context that allows both and so times for comprehending indirect meaning should be equal to times for comprehending a direct meaning.

Unlike previous experiments, instead of presenting subjects with a paraphrase judgment task, as in the Gibbs (1979, 1983, 1986c) experiments, the first experiment utilized a self-paced reading methodology designed to serve as a more direct measure of on-line processing of direct and indirect speech acts. This methodology consists of participants reading a text a few words at a time and pressing a button to continue reading once the textual chunk presented is understood. In this experiment, what was of interest is the time it took participants to comprehend a textual chunk that categorized a target utterance said by one of the characters in the text

participants were reading.

Using this methodology instead of a paraphrase judgment task should have two advantages to paraphrase judgments. First, as discussed in the previous chapter, Janus and Bever (1985) have argued that the paraphrase judgment tasks used by Gibbs (1979, 1983) are problematic as comprehension is being measured at the end of a sentence. On their view, this adds a confound in that the ends of sentences in texts are routinely subject to a specific elongation of attention due to contextual integration processes. Since the conclusions made from these experiments should be related to the comprehension of direct and indirect speech acts, not sentences or texts at large, utilizing self-paced reading makes it possible to get comprehension judgments in the middle of a sentence, avoiding the confound of end-of-sentence increases in comprehension time. In experiment 1, all measures of comprehension were taken in the middle of a sentence to avoid this confound.

Second, utilizing self-paced reading provides a closer measure of on-line processing than paraphrase judgment tasks and the way it was utilized in experiment 1 was designed to more closely mirror listener understanding of

speech acts. Instead of encouraging participants to come to some sort of conclusion about the meaning of a target sentence by having participants explicitly make judgments of paraphrases of target utterances, all categorizations occurred as part of the story contexts. By doing this, it was hoped that participants' comprehension of speech acts would closely mirror how listeners understand speech acts in context. In the real world listeners do not resolve the meaning of an act by comparing it to a paraphrase; they simply decide on an interpretation which becomes either consistent with or conflicts with context. By making the categorization of speech acts less explicit, and attempting to integrate categorization into a natural reading environment, it was hoped that delays in comprehension would directly reflect the sort of comprehension issues actual people experience when understanding natural language.

Additionally, the stimuli for the first experiment were created so that the direct and indirect meanings of target utterances were not directly tied to sentence form and were not conventional. In order to ensure this, several different types of speech acts were used - many which would have similar sentence forms if expressed

directly, for example, assertions, advice, and compliments. Also, non-conventional forms were used in order to guarantee that the identification of the speech act meanings was not tied to a particular conventional sentence expression. Details of the stimuli used are discussed in the individual experiments below.

Experiment 2 was conducted to investigate both the processing of indirect speech acts and to see if any information could be gained about the effects of conventionality on processing indirect acts. Experiment 2 was a replication of the first Shapiro and Murphy (1993) experiment where informed participants were asked to judge whether a particular sentence had a direct meaning. Experiment 2 expanded the Shapiro and Murphy analysis through a more detailed analysis of errors in categorization and slightly different comparisons.

The primary reason for straightforward replication is two-fold. First, a consistent replication would increase the interpretability of the results. Second, a consistent replication would counter potential objections to the generalizability and results of the original Shapiro and Murphy experiment. Recall that in chapter 3, two potential problems were discussed in terms of that experiment.

First, the conventionality of the stimulus items used that can be adduced as a competing explanation for the Shapiro and Murphy results. Second, informed participants were used who may have been responding only to the task and this clouds the interpretation of the result as a test of processing.

In the original experiment Shapiro and Murphy (1993) found that the presence of indirect meaning slowed judgments of the plausibility of direct meaning, a finding that supports the CDM and refutes the SPM, SMPM, and MSPM since multiple meanings appear to be processed which interfere with interpretations of direct meaning. Since the SMPM predicts only a best reading, the multiple meanings are problematic for that model as only the best meaning should be rendered. For the SPM and the MSPM, since direct meaning is the first meaning interpreted, the interference of indirect meaning is problematic since indirect meaning should not influence interpretations of direct meaning. However, even though their results would support such an interpretation, they declined to explain any of their results in terms of conventionality.

Instead, Shapiro and Murphy argued that the prior research did not demonstrate that direct meaning is hard to

derive in the case of conventional indirect speech acts. If it were the case that indirect meanings are the primary meaning of conventional indirect acts (c_{direct} meaning), the fact that this meaning may be derived first could make it difficult to interpret l_{direct} (or $c_{indirect}$) meaning. This would explain why the direct meaning plausible/indirect meaning plausible condition took longer to judge than the direct meaning implausible/indirect meaning implausible condition. Conventionality would also explain why the direct meaning plausible/indirect meaning plausible category took longer to judge than the direct meaning plausible/indirect meaning implausible as sentences in conventional form were only present in the first category. Because of the strength of this competing claim, additional comparisons were made in this experiment treating the conventionality explanation as a competing hypothesis for their results.

This experiment used participants who already had some training in the identification of direct and indirect speech acts to attempt to correct for the potential training bias in the Shapiro and Murphy (1993) experiment. Since Shapiro and Murphy used participants who were instructed and trained before completing the experiment,

the differences in times between the conditions could simply be a function of the ease of identifying certain examples as consistent with experimental categories, not in reflecting knowledge of speech acts. By using respondents who already had some knowledge of speech act theory, and who were not trained solely for the experimental task, it was assumed that this may increase the interpretations that judgments have something to do with speech acts and not simply with experimental materials.

Experiment 1

The first experiment tested the hypothesis found in the extant research that direct meaning is processed no faster than indirect meaning (Gibbs, 1979). As previously discussed, earlier experiments by Gibbs are subject to possible methodological criticisms, most notably that the primary measure used in his research is not a measure of on-line processing, but of post-processing since the experiments rely on response time associated with paraphrase judgments[1]. To correct for this possible defect, the current experiment utilizes the self-paced reading methodology that measures the time it takes a subject to read a segment of text (be it a word or a phrase or a sentence). Since the subject controls the speed of

reading, and is instructed to continue reading only when they comprehend the text segment they are exposed to, the methodology more directly tests online comprehension. Here, subjects' responses are not timed at the point of decision for the adequacy of paraphrase judgments, a decision task which comes long after a subject has resolved the meaning of an utterance, but instead occurs as closely as possible to the exact time that an utterance's possible meaning is decided.

For the present experiment, the reading time for a particular characterization of an utterance that could be interpreted as being either direct or indirect was the primary measure of interest. Since CDM research is based on the assumption that utterances are interpreted in context differently in context than out of context, contexts were created that did not privilege a primary interpretation but instead would allow either (or both) interpretations of an act. For example, subjects may have read a context like the following that contains an indeterminate utterance denoted in italics:

> Rex's sixth grade class was trying to gather cans of food for a school food drive. Each classroom in the school took part in the competition. The classroom to

bring in the most food would win a pizza party. Rex wanted to win the competition, so he brought in hundreds of cans of food. His teacher looked at the food and said, *"How did you manage to get all this?"*

In this context, the teacher's utterance could have many possible interpretations. At least two possibilities for interpretation are that the utterance is intended as a direct question (i.e., "By what means did you collect all these cans?") or as an indirect compliment (i.e., "You did a great job in collecting all these cans".). A context-dependent model of indirect speech act comprehension would suggest that either meaning would be equally available since context does not privilege a particular interpretation. Therefore, it should take no longer for a participant to comprehend (here, categorize) either the direct or the indirect interpretation. The MSPM, in contrast, should predict that a direct act interpretation would be the most available, since the assignation of direct meaning is always the first processing step in fixing total meaning and must be rejected, and added to, in order to obtain indirect meaning. If this is correct, the direct act interpretation should be understood faster than the indirect act interpretation. To test these

predictions, the time it took participants to respond to a categorization of the utterance was measured. So, for the preceding example, some participants read, "Rex understood his teacher's question", a categorization consistent with the interpretation of the potentially indeterminate utterance as direct, while others read, "Rex understood his teacher's compliment" a categorization consistent with an indirect interpretation of the potentially indeterminate utterance. It was expected that if all interpretations are equally possible, as with the context-dependent model, then there would be no differences in the reading time for the direct categorization versus the indirect categorization since either is possible in this context. If the MSPM is correct, then the direct categorization should be read faster.

Method

Participants. 47 participants from a Southwestern university volunteered for the experiment. They received extra course credit for their participation. All participants were native speakers of English.

Procedure. Each trial consisted of participants silently reading a paragraph and answering a yes/no comprehension question following each paragraph. The

paragraphs were presented in a self-paced reading format where participants read approximately five words of a paragraph and, when understood, pressed a button marked YES to progress to the next portion of the paragraph.[2] After advancing to the last portion of the paragraph participants were presented with a comprehension question that asked about a detail contained in the paragraph. Participants indicated their answer by pressing either the YES or NO key and, when finished, pressed the spacebar to advance to the next paragraph.

Before beginning the experiment, participants were told to read each paragraph as quickly as they could comfortably go while still being able to answer the comprehension question. Several practice trials were utilized so participants could get comfortable with the format of this experiment before the experimental stimulus was introduced. The experiment, in total, took approximately 30 minutes to complete.

Design and Materials. This experiment utilized a one-way repeated measures random factor design where both subjects and individual messages were nested in the within subjects factor, message type. Message type consisted of four levels: indeterminate act/indirect meaning label,

indeterminate act/direct meaning label, determinate act/indirect meaning label, and determinate act/direct meaning label. The two indeterminate act levels used the same utterance, but the two determinate act levels used different utterances to fit the indirect or direct meaning label. The major comparison testing the research question was between the indeterminate act/indirect meaning label and indeterminate act/direct meaning label conditions. The remaining conditions were intended to serve as a control to ensure that categorizing utterances of one type (say, requests) was not more difficult than categorizing utterances of another type (say, questions). So, for these conditions, the contexts remained the same, but instead of an indeterminate utterance (where both meanings were possible), a direct utterance was given that reflected either the direct or the indirect meaning, depending on context. Examples of the types of messages a subject would have seen are given in Table 4.

Table 4

Example of Messages Used in Experiment One

Context:

Jan is a nutritionist at a local hospital. She has three children: Sam, Lisa, and Diane. She was always interested in preparing healthy meals for her family and was always giving them advice about nutrition. One night during dinner she noticed her husband hadn't eaten any of the carrots that were one if the side-dishes she had prepared. She announced to the table, . . .

Indeterminate Act:

"Carrots are good for you."

Direct Meaning Label:

Her husband ignored her information and kept eating his chicken and rice.

Indirect Meaning Label:

Her husband ignored her advice since he knew carrots were nutritious.

Determinate Act/Direct Meaning Label:

"Carrots have vitamin A."

Her husband ignored her information since he knew carrots were nutritious.

Determinate Act/Indirect Meaning Label:

"You should eat more carrots."

Her husband ignored her advice and kept eating his chicken and rice.

Four experimental lists were created consisting of 28

messages with the same context, but with varying target utterances/acts and varying categorization items/meaning labels. The full set of examples of context, type of acts, and the categorization reading/meaning label can be found in Appendix A. The lists were presented in random order to all participants and each participant viewed 7 messages from each condition (indeterminate act/direct meaning label, indeterminate act/indirect meaning label, determinate act/direct meaning label, and determinate act/indirect meaning label) for a total of 28 messages seen by each participant.

Several different types of direct and indirect acts were utilized in this experiment to allow for generalization to all types of indirection, not just a specific type of indirection. For example, participants read indirect requests, indirect advice, indirect warnings, indirect compliments, etc. This experiment also attempted to utilize non-conventional forms and means for the indirect acts, since one criticism of earlier research testing the SPM model time have utilized conventional acts as experimental materials. In addition, non-conventional items were necessary for testing the competing hypotheses about the processing of non-conventional speech acts. For

the meaning labeling materials, all meaning labels (categorizations) were approximately four words in length and constructed to be exactly the same within and between conditions, only varying in which speech act was being referred to (e.g., *John ignored Tim's request* versus *John ignored Tim's statement*).

Since prior research has found that comprehension time increases when comprehension time is measured at the end of sentences, since processing at the end of sentences requires extra time (Janus and Bever, 1985), the categorization reading times were measured in the middle of a sentence (e.g., "Rex understood his teacher's question/and said his mom helped"). This should eliminate one competing explanation that the similarity in processing time between direct and indirect categorization times are the result of a methodological artifact.

Results

Because of the presence of random factors, in messages and in participants, a repeated measure random factor analysis was computed to test the effects of message type. Since the design was complex, quasi-F's had to be computed to test all significant variables. Table 5 contains the final quasi-F composed to test message type.

Table 5

Quasi-F Ratio Testing Message Type

Sources of Variance	Expected Mean Squares
Message Type [C]	$fms\Theta^2_C + s\sigma^2_{m(CF)} + m\sigma^2_{C \times s(F)} + \sigma^2_{m(CF) \times s(F)}$
Form [F]	$cms\Theta^2_F + s\sigma^2_{m(CF)} + m\sigma^2_{C \times s(F)} + \sigma^2_{m(CF) \times s(F)} + cm\sigma^2_{s(F)}$
messages [m(CF)]	$s\sigma^2_{m(CF)} + \sigma^2_{m(CF) \times s(F)}$
subjects [s(F)]	$cm\sigma^2_{s(F)} + \sigma^2_{m(CF) \times s(F)}$
C x F	$sm\Theta^2_{C \times F} + m\sigma^2_{C \times s(F)} + \sigma^2_{m(CF) \times s(F)}$
C x s(F)	$m\sigma^2_{C \times s(F)} + \sigma^2_{m(CF) \times s(F)}$
m(CF) x s(F)	$\sigma^2_{m(CF) \times s(F)}$

Quasi F

$$F' = \frac{MS_C + MS_{m(CF) \times s(F)}}{MS_{m(CF)} + MS_{C \times S(F)}}$$

Results of a within-subjects analysis of variance revealed significant differences between the levels of the within-subjects factor, message type, F (3.88, 57.57) = 3.23, $p < .025$.[3] Planned contrasts revealed a significant difference between the means of the indeterminate target utterance/direct categorization and the indeterminate target utterance/indirect categorization, F (1,58) = 6.33, $p < .025$, the test conditions of interest. Table 6 shows the mean response time for each target phrase. No significant differences were found between the means for

indeterminate target utterance/direct categorization, direct target utterance/direct categorization, direct target utterance/indirect categorization, F (1, 58) = < 1.

Table 6
Means and Standard Deviations for Message Type in Msec

	Determinate Act/Direct Meaning Label	Determinate Act/Indirect Meaning Label	Indeterminate Act/Direct Meaning Label	Indeterminate Act/Indirect Meaning Label
Means	1301.943	1341.782	1298.646	1520.174
Std. Dev	308.548	231.399	303.707	507.743

Experiment 2

The second experiment was a replication of an earlier experiment conducted by Shapiro and Murphy (1993) where participants were asked to judge whether a series of sentences had a primary direct meaning. The Shapiro and Murphy experiment was modeled on an earlier experiment by Glucksberg, Gildea, and Brookin (1982) that investigated metaphor comprehension. In the Glucksberg et al. study, participants were presented with a series of sentences that could be judged to either have plausible metaphorical

meaning or not and participants were asked to judge whether each sentence was literally true or false. The results revealed that when a sentence could be interpreted as having a plausible metaphorical meaning this meaning interfered with the responses of truth or falsity: in the cases where there was a metaphorical meaning, the participants' judgment times slowed considerably. Shapiro and Murphy sought to discover whether a similar phenomenon would be present with indirect speech acts, specifically testing whether the presence of a plausible indirect meaning influenced the comprehension of direct speech acts.

As described above and in Chapter 3, this experiment utilized informed participants and consisted of testing sentences varying among 4 categories: direct meaning plausible, direct meaning implausible, indirect meaning plausible, indirect meaning implausible. These stimuli conditions were combined to form various stimulus items (instances of each meaningful combination of categories to make four conditions: direct meaning plausible/indirect meaning plausible (i.e., +D/+I); direct meaning implausible/indirect meaning plausible (i.e., -D/+I); direct meaning plausible/indirect meaning implausible (i.e., +D/-I); and both meanings implausible (i.e., -D/-I).

Both the judgments of direct meaning and the response times associated with making these judgments were recorded; specifically, to indicate whether the presence of indirect meaning interferes with direct meaning, whether direct meaning is computed before indirect meaning, and whether indirect meaning can be ignored when readers attempt to do so.

By model, the MSPM would predict that there would be no interference of indirect meaning since indirect meaning is derived only if necessary. Additionally, as in the Shapiro and Murphy (1993) experiments and for the same reasons, the MSPM would predict that direct meaning is understood more quickly than indirect meaning. Overall, the idea being that c_{direct} is processed faster than $c_{indirect}$, since the computation and interpretation of indirect meaning relies on the computation and interpretation of direct meaning. The CDM would suggest that since all meanings are possible, participants would have to decide among all possible meanings in order to decide what meaning is plausible. This would mean that there would be a slow-down in deciding whether direct meaning is plausible in situations where indirect meaning is also plausible. So, differences are expected between conditions where no

indirect meanings are possible and in the conditions where they are not.

Method

Participants. 20 undergraduate students from a large southwestern university who had successfully completed the lecture portion of a course on pragmatics in the Communication department were used for the experiment. Unlike in the original Shapiro and Murphy (1993) experiment, students who already had a background in pragmatics were used to in order to avoid the competing hypothesis that the results were due to practice effects. By using students already educated in speech act theory extensive practice should not be needed. The participants all received extra course credit for their participation. All participants were native speakers of English.

Procedure. Participants were all instructed in a 30 minute lecture the difference between direct and indirect speech acts. Though participants had already successfully completed the coursework from a course on pragmatics, where a significant portion was dedicated to speech acts and indirection, the lecture served to remind participants about direct and indirect speech acts and how they are distinguished. During the lecture, students were asked to

identify whether certain utterances had a primary direct meaning. Each example was discussed and when all questions were answered, participants were exposed randomly to a series of sentences, one at a time, on a computer screen and asked to identify whether the sentences they viewed had a primary direct meaning. They made these judgments by pressing either the left hand or the right hand shift keys (marked either "YES" or "NO") and the positive response was associated with the respondent's dominant hand. All participants were right-handed, so in practice the right shift key served as the "YES" response and the left shift key as the "NO" response.

Before the timed trials began, participants received some further practice identifying direct and indirect meaning in a series of un-timed trials on the computer. The instructions that appeared on the computer, with an example of the test utterances, are reprinted in Appendix B. All participants reported being comfortable with the experimental task before beginning the timed trials.

As in the previous experiment, this experiment also utilized the DMDX experimental software programmed by Jonathan Forster at the University of Arizona. Sentences were presented in a random order to each participant.

After making their judgment, participants pressed the spacebar on the keyboard to continue to the next sentence. They were instructed to go as quickly as they could without making any errors in judgment. Any incorrect error presented the message after judgment "ERROR - The correct answer was [yes/no]" as was the case in the Shapiro and Murphy experiment.

Design and materials. The design, in principle, was a one-way, repeated measure, random factor design. As described above, the random within factor was messages appearing in one of four categories identified by Shapiro and Murphy:

+D/+I: Direct meaning plausible, indirect meaning plausible.

+D/-I: Direct meaning plausible, indirect meaning implausible.

-D/+I: Direct meaning plausible, indirect meaning plausible.

-D/-I: Direct meaning implausible, indirect meaning implausible.

In the straightforward replications, participants viewed 12 messages from each category, for a total of 48 messages used. However, participants also viewed and

judged an additional 10 sentences, included to fill out conventional examples for later analysis. The list of sentences, plus additional inclusions, is presented in Appendix C.

In the original experiment, Shapiro and Murphy reported low error rates in all conditions. Because of the low error, an overall F could be easily computed utilizing only the data where participants made a correct judgment without unbalancing the overall design. This was impossible to do in the replication given the large number of errors. Table 7 reports the errors in this experiment as compared to the results obtained by Shapiro and Murphy.

Table 7
Comparison of Error Rates in Shapiro and Murphy (1993) and the Present Investigation

	+D/-I	+D/+I	-D/+I	-D/-I
Shapiro and Murphy	1%	6%	4%	3%
Present Experiment	50%	26%	65%	16%

Since the design was a fully random repeated measures test, F terms must be composed specially and one assumption

of this sort of design is that the number of replications be balanced. Since certain items contained over 70% incorrect categorizations, using only the correct judgments in a random factor analysis was impossible as the most reliable solution would be to drop the number of replications and this would result in too few replications to make adequate judgments about the generalizability of the messages (see, Keppel, 1991, for a discussion of unbalanced designs in general). For certain items, the number of errors was as great as 100% for some participants, meaning the number of participants would have to be dropped and because many other cells still had error rates of up to 66%, only around 3 replications could be included to balance the design and only within the -D/-I condition where error rates were lower could the selection of replications be random. So, not only would the number of replications to adequately test the model be too low to allow generalizability, but also the available replications would be non-random.

Since increasing generalizability of the factor of interest is the exact reason to conduct an analysis where the F-ratios tested would treat messages as a replicated random factor, it is problematic to lose the information

this sort of analysis contains by only running a more simple repeated measures ANOVA where imbalance can be more easily corrected. However, as discussed above, it is impossible to run the more correct tests with the sort of imbalance caused by using only correct responses. To attempt to remedy these concerns and provide an adequate answer to the research question, two separate analyses were conducted and must be interpreted together. The first tested the random factor repeated measures design, but did not distinguish between correct and incorrect categorizations. This of course means that the response times associated with incorrect judgments is also included, decreasing the uniqueness of the categories. However, from this data it is possible to get an overall estimation of the trend of the data and to see if the results here would mirror the results from the second analysis. The second analysis used was a repeated measures ANOVA, where the within factor was message type, but where the replications were not specifically tested. In this test, only correct judgments were used, but again, since general F ratios for repeated measures were used, not ones constructed to adequately tease out the sources of variance present in the fully random model, some information is lost.

Results

The first analysis conducted was on the fully random model with message type serving as a within subjects replication variable and all response times associated with judgments (correct or incorrect) were used. The overall F was significant, F (3.26, 88.46) = 4.21, $p < .01$. Comparisons revealed significant differences between the means of +D/+I and +D/-I, F (1,88) = 5.328, $p = .025$ and -D/+I and -D/-I, F (1,88) = 5.707, $p = .02$. The means for each condition when all judgments are used can be found in Table 8.

Table 8

Means and Standard Deviations for All Judgments in Msec

	+D/-I	+D/+I	-D/+I	-D/-I
Means	2473.18	2923.74	2787.54	2321.24
Std. Deviation	419.10	469.64	544.87	408.01

Since use of the overall times for all judgments can be problematic as both correct and incorrect judgments are utilized, a second test was conducted treating message type as a within subjects factor in an unbalanced repeated

measures ANOVA. Again, since the results of the statistical tests of the repeated measure analysis with messages being treated as a random factor when the design is seriously unbalanced cannot be meaningfully interpreted, this test was meant to be taken in conjunction with the previous analysis. This analysis revealed significant differences between the means of the within factor message type, F (3,51) = 3.991, p = .01. No corrections were necessary for heterogeneity of variance since this assumption was met. Mauchly's Sphericity test revealed a non-significant result, *Mauchly W* (5) = .636, p = .212. An unweighted means analysis using estimated marginal means was used to correct for the imbalance in the design as suggested by Keppel (1991).

Planned contrasts based on the results of the original Shapiro and Murphy experiment were conducted on the estimated marginal means using a least significant different adjustment. Participants judged the -D/-I category faster than participant judgments in the +D/+I, *MD* = 308.50, *SD* = 104.16, p = .01. Likewise, judgments in the -D/-I were faster than judgments in the -D/+I category, *MD* = 368.97, *SD* = 129.22, p = .01. No other significant differences were found. Table 9 reports the means marginal

means for each stimulus category.

Table 9
Estimated Means and Standard Error for Correct Judgments in Msec

	+D/-I	+D/+I	-D/+I	-D/-I
Means	2147.67	2309.90	2370.37	2001.40
Std. Error	83.215	105.60	99.10	64.61

The overall tests and planned comparisons do not fully replicate the results of Shapiro and Murphy. In the first analysis where all judgments were used, a pattern replicating the Shapiro and Murphy (1993) results was discovered where the presence of indirect meaning slowed down judgments of direct meaning. However, the second analysis where only correct judgments did not replicate these results. No significant differences were found in the response times associated with direct and indirect plausible meanings and plausible direct meanings (i.e., no differences were found between +D/+I and +D/-I) as in the Shapiro and Murphy results and the results of the first analysis. Overall then, it appears that in this

replication, indirect meaning had no effect on the determination of direct meaning. Additionally, it is of some interest that the mean scores for the present investigation were much longer than the mean responses in the original Shapiro and Murphy experiment. The interpretation of these results is discussed more in Chapter 5.

Additionally, since conventionality of some stimuli were offered as a competing explanation for the results from the original experiment, some additional tests were conducted to investigate the role conventionality plays in explaining any of these results. Unfortunately, the results are somewhat mixed, but taken together do seem to indicate that direct meaning is harder to derive from conventional indirect speech acts.

First, stimuli items, plus additional sentences that were included in the analysis, were selected as being conventional if they were in the form of a "Can you", "Can I", or "May I" construction. The judgments of plausible direct meaning present in the sentences was used as a dependent variable and two overall tests were performed. The first analyzed whether participants had a more difficult time in categorizing conventional meaning

correctly (according to the Shapiro and Murphy conditions) by comparing the percentage of errors made in judging conventional versus non-conventional sentences within stimuli categories. Since none of the utterances was conventional in the +D/-I condition, and nonsensical in the -D/-I condition, tests were only conducted on conventional and non-conventional judgments within the +D/+I and -D/+I conditions. Table 10 contains the sentences used for this comparison in the +D/+I condition and an analysis of the judgments testing whether the categorizations were significantly different from what would be obtained by chance alone.

Table 10
Judgments of Conventional and Non-Conventional ISAs in +D/+I Categories

CONVENTIONAL ITEMS IN +D/+I
"Can you spell Mississippi?"
Direct Meaning Plausible: 85%, sig., p = .003
"May I speak to John?"
Direct Meaning Plausible: 40%*, non-sig., p = .5
"Can you tell me the square root of 10?"
Direct Meaning Plausible: 65%, non-sig., p = .26
"Can you spell Azerbaijan?"
Direct Meaning Plausible: 85%, sig., p = .003
"Can you tell me what time you close tonight?"
Direct Meaning Plausible: 35%*, non-sig., p = .26
NON-CONVENTIONAL ITEMS IN +D/+I
"What is the point of this?"
Direct Meaning Plausible: 65%, non-sig., p = .26
"Are you listening?"
Direct Meaning Plausible: 55%, non-sig., p = .82
"Did you eat all the cake?"
Direct Meaning Plausible: 70%, non-sig., p = .12

Table 10 continued

"Do you have my car keys?"
Direct Meaning Plausible: 80%, sig., p = .01
"Do you have any money?"
Direct Meaning Plausible: 90%, sig., p < .001

* Results opposite classification expected within this stimulus category.

Results from the overall classification of proportions show that the non-conventional utterances are judged correctly at a level above chance (73% correct), $p = .05$ within the +D/+I category. Further analysis reveal conventional utterances are judged correctly only 65% of the time within this category, which is not significantly different from chance. Also, for the two sentences "Can you tell me what time you close tonight?" and "May I speak with John?", the majority of the respondents, though the result is non-significant when tested against chance, judged these as having no plausible direct meaning. Also, two categorized non-conventional examples, "Are you listening?" and "What's the point of this", can also be considered fairly conventional, though here their conventionality is determined by use, not form. The

participants' poor performance on judging these items could also show the influence of conventionality as well.

Overall, there are two preliminary conclusions to be taken forward into the next comparison. The first is that even with trained participants who could judge whether direct meaning was present had a difficult time determining if this meaning was plausible. This is evidenced by the high error rates (as evidenced by Table 7) and basically a random split between correct and incorrect classifications within the +D/+I category. Unlike the Shapiro and Murphy experiment, participants do not see these stimuli items as reflecting the condition they represent - at least in terms of whether the meaning is plausible. This is an issue that will be discussed in more detail in Chapter 5. Second, in the case of conventionality, conventional forms appear to make some sentences harder to judge, in that the conventional form appears to indicate to participants no direct meaning, at least not at a level that is significantly different from chance.

The second set of comparisons used conventional and non-conventional items from the -D/+I category. This category had the highest error rates, with 65% of respondents incorrectly judging some stimuli items as

having direct meaning. Of course, theoretically, these items do have direct meaning, but since the task was to determine whether this meaning was plausible, the same difficulty participants had in judging items from the +D/+I category is reflected here. The results of correct categorizations within the +D/+I category by conventional and non-conventional sentences are presented in Table 11.

Table 11
Judgments of Conventional and Non-Conventional ISAs in -D/+I Categories

CONVENTIONAL ITEMS IN -D/+I
"Can you stop whistling?"
Direct Meaning Implausible: 25%*, sig., p = .04
"Can I offer you a drink?"
Direct Meaning Implausible: 20%*, sig., p = .01
"Can you tell me your name?"
Direct Meaning Implausible: 15%*, sig., p = .003
"Can you get off my foot?"
Direct Meaning Implausible: 85%, sig., p = .003
"May I remind you your account is overdue?"
Direct Meaning Implausible: 55%, non-sig., p = .26
"May I ask you to close the door?"
Direct Meaning Implausible: 35%*, non-sig., p = .82

Table 11 continued

"Can I ask you what time it is?"
Direct Meaning Implausible: 40%*, non-sig., p = .82
NON-CONVENTIONAL ITEMS IN -D/+I
"Could she wear any more make-up?"
Direct Meaning Implausible: 45%*, non-sig., p = .82
"Do you have a brain?"
Direct Meaning Implausible: 50%, non-sig., p = 1
"Will it ever stop raining?"
Direct Meaning Implausible: 25%*, sig., p = .04
"Is she going to take forever?"
Direct Meaning Implausible: 50%, non-sig., p = 1
"Where is my head today?"
Direct Meaning Implausible: 60%, non-sig., p = .5
"Is there any place safe from the cold?"
Direct Meaning Implausible: 25%*, sig., p = .04
"Where did the time go?"
Direct Meaning Implausible: 45%*, non-sig., p = .82

* Results opposite classification expected within this stimulus category.

The results reveal even more strikingly that participants had an extremely difficult time making

judgments of whether direct meaning was plausible. The results of this condition and +D/+I compared to the results from +D/-I and -D/-I show that it was not a matter of not understanding the task. Though there were some errors in the latter categories, items within those categories were generally judged as consistent with their classification. So, for these participants, something is odd about the +D/+I and -D/+I sentences.

It is likely that this something odd is conventionality, even with the apparently conflicting results given in Table 11. First, items were classified as conventional or non-conventional based on only one criteria for conventionality: sentence form. In the analysis of +D/+I, it appears the form did complicate judgments of plausibility of direct meaning, where it appears this did not occur, in the same way, for items in the -D/+I category. However, as mentioned for the items of +D/+I items, there is more than one way to look at conventionality. In the -D/+I category many of the sentences identified as non-conventional could be considered conventional in use, if not in form. Therefore, comparing the difficulty of correct classification in the +D/+I and -D/+I categories with the relative ease of

correct classification in the +D/-I and -D/-I categories, apparently conventionality confuses judgments of direct meaning. So, the bizarre results in classification here could point to the fact that conventionality is a special process and one that has some sort of effect on the overall interpretation of indirect speech acts.

However, as should be clear, whatever sense of conventionality (or both) is employed, conventionality does not seem to have a clear effect on processing in these examples. One would expect that the role of conventionality should be easily attributed, perhaps following Clark (1979) for example, in that the more conventional the utterance, the less likely the direct act is to be plausible or taken seriously. However, that does not seem to happen in these examples, as sometimes direct meaning appears facilitated (or made to be judged more plausible) and sometimes not. This is clear in judgments of a sentence like "Can you tell me your name?" that was considered to have plausible direct meaning, but where a sentence like "Can you tell me what time you close tonight?" was not.

However, in comparing the examples used in the +D/+I and -D/+I categories, it is interesting to note what sort

of "indirect" utterances are being used. Though most can be thought to be conventional in form, not all of the examples indicate the same sort of indirect acts. Though all can be considered direct questions, sometimes the indirect act would be a possible complaint (e.g., "Is there any place safe from the cold?"), a rhetorical question of some sort (e.g., "Where did the time go?"), and sometimes a request (e.g., "Can you get off my foot?"). It is possible here that the sort of indirect act being communicated conventionally influenced the judgments of possible direct meaning, making it more or less hard to judge as plausible. For example, there is some reason to believe that participants heard "Is there any place safe from the cold?" simply as a direct rhetorical question and therefore judged it as having plausible direct meaning, whereas they took the request meaning as likely in the case of "Can you tell me your name?" and therefore judged that as having plausible direct meaning.

Likewise, it could be that respondents were confused about whether or not to take some indirect requests as having serious question meanings, since it is possible that questions can be heard as requests to tell (Lewis, 1969; Gordon & Lakoff, 1975). For example, perhaps respondents

were unable to separate a question rendering and a request rendering of examples like "Can you tell me your name?". Here, it could be that participants simply judged the example as having a plausible direct meaning because the meaning taken by participants was the request meaning (tell me your name) and not the question meaning (since everyone has the ability after all).

Finally, since all these examples were presented without context, and as Gibbs (1981) made clear, conventionality must be interpreted in a context, the influence of conventionality here is perhaps undeterminable. Since sometimes conventional forms can be more conventional in certain contexts and less in others, maybe the effect of conventionality (in a general sense) should not be analyzed as equal in all items. Certain items made suggest contexts that make them more conventional, or more likely to be conventionally interpreted, than other items. Though this does not tell us much about how to interpret the results, it does at least suggest why there is no clear influence of conventionality in encouraging judgments of plausible direct meaning.

So, there is some evidence that conventionality has an

effect on processing, or at least on judging direct meaning, but whether it makes direct meaning differentially hard to process is still unclear. There is some evidence in the categorical data that this may be the case, as many of the conventional forms did appear to confuse respondents and render their overall judgments of plausibility of direct meanings close to chance. However, as there were no differences between conventional and non-conventional forms in the -D/+I condition, the influence of conventionality is still unresolved.

To further explore this competing hypothesis, two further analyses were conducted looking at speed of judgment for conventional and non-conventional responses within the +D/+I category and with conventional responses compared against 5 randomly selected samples from the non-conventional +D/-I category. The reason for the former comparison is because these items, as discussed above, reflected differences in judgments of plausible direct meaning as a function of conventionality of form, but also because this category was not pragmatically bizarre, as the -D/+I condition is where direct meanings are in fact present and it can be expected that people trained in speech act theory would be able to determine that these

meanings are in fact there - a conclusion the results of the -D/+I category analysis reflects. The reason for this later comparison is that the influence of conventionality should be apparent in a direct test between conventional and non-conventional items where there are direct meanings that are plausible, and since items in the +D/-I case were direct questions, the influence of conventionality should be able to be demonstrated by the comparison with conventional indirect requests.

Since only correct judgments were used, again, because of an unbalanced design, a repeated measures ANOVA treating message type, here conventional and non-conventional messages, was conducted. Neither analysis revealed significant differences between the times to make a judgment of direct meaning plausible when only correct judgments were used. Within the +D/+I category, there were no significant differences in the means for the conventional versus non-conventional sentences. Likewise, comparing the +D/+I conventional sentences with 5 randomly selected sentences from +D/-I showed no significant differences in mean response times.

Chapter 4 Notes

[1] In Gibbs' (1979) original experiment, the primary measure of processing time was comprised of both the time it took subjects to read and understand the target utterance (comprehension time) and the time it took to read and respond to the paraphrase judgment task. Since these two measures were combined to test the hypotheses, the criticisms that paraphrase judgment tasks do not measure on-line processing still apply.

[2] This experiment utilized the DMDX experimental software programmed by Jonathan Forster at the University of Arizona. DMDX is a member of the DMASTR family of experimental software developed at Monash University and at the University of Arizona by K. I. Forster and J. C. Forster.

[3] Degrees of freedom for this test had to be approximated. In this statistical analysis, degrees of freedom were approximated using the Satterthwaite method from Winer (1971) (see, also, Jackson & Brashers, 1994, for a discussion of the approximation of degrees of freedom).

CHAPTER 5

MODELING THE PROCESSING OF INDIRECT SPEECH ACTS

Results of the empirical review and the present experiment provide an interesting picture of the processing of indirect speech acts. The experimental results, taken in conjunction with the results of extant empirical work, seem to indicate that a model like the MSPM, a modified version of the SPM, approximates the correct model of the processing of indirect speech acts. They also seem to indicate that a model like the CDM certainly is untenable when explaining this sort of processing.

This result clearly contradicts much of the empirical research and theoretical criticism made by researchers and scholars to date. In their analyses, little to no support was found for the SPM and the conclusion was made that the processing of indirect speech acts could never proceed from the prior understanding by a listener of direct speech acts. However, the criticism of the SPM was faulty in many respects. Theoretically, the criticism was irrelevant or related to only a particular view on speech acts and empirically the results of experiments testing the SPM were full of unwarranted conclusions and methodological

problems. Additionally, no direct support was ever directly found for an alternative model.

Despite some of the flaws in the criticism against the SPM, the empirical research on the processing of conventional indirect speech acts does render the SPM an untenable model. The SPM proposes that in the processing of *all* indirect speech acts, regardless of type of indirect speech act, the computation of indirection must follow the computation of direct meaning. It is a clear experimental result that in the case of conventional indirect speech acts, like "Can you pass the salt?", the logically (theoretically) determined direct speech act meaning (question) is not processed or understood in a first computational step. This then must lead to a rejection of the SPM as a plausible model for the processing of indirect speech acts.

This does not mean, however, that the sort of abstract stages present in the SPM are also incorrect. Instead, it only means that conventionality, a special sort of processing, must be incorporated into the SPM. This can be done with a simple modification: the suggestion of c_{direct} and $c_{indirect}$ meanings as distinguished from the theoretical/logical meanings (l_{direct} and $l_{indirect}$) made in

indirect speech act theory.

These cognitive processing categories were incorporated into the SPM in order to propose a modified version of this model, the MSPM. The MSPM proposes that the processing of indirect speech acts occurs in three stages, but that processing proceeds from an initial determination of the best meaning of an utterance on a particular occasion, the c_{direct} meaning. For indirect speech acts, that would mean processing begins by a listener's determination of direct meaning. When processing non-conventional indirect speech acts, this direct meaning would be the meaning interpreted by reference to any illocutionary force indicating devices and to some set of mutually understood beliefs (so $c_{direct} = l_{direct}$ and $c_{indirect} = l_{indirect}$). In the case of conventional indirect speech acts, the best meaning would be the meaning that is conventionally associated with the meaning of the indirect act (so $c_{direct} = l_{indirect}$). Since the MSPM appears to explain the empirical results obtained in earlier experiments on the processing of indirect speech acts, and is not subject to the criticisms of the SPM or CDM, this model was experimentally tested to determine its adequacy for explaining the cognitive processing of indirect speech

acts of all types (conventional and non-conventional).

The results from experiment 1 certainly support the MSPM. As discussed, most of the work on the processing of indirect speech acts has been troubled by work testing conventional indirect speech acts and little has been discovered about the processing of non-conventional indirect speech acts in context. Since any model of processing indirect speech acts must account for processing of all indirect speech acts, Experiment 1 was constructed to test the processing of non-conventional acts in contexts that would allow both a direct and indirect interpretation of an indirect speech act.

If a model like the CDM was correct, it should be the case that both the direct and indirect meanings of the speech act would be constructed by listeners since context allows both constructions. Therefore, no differences would be detected in the comprehension of categorizations of those acts, be those categorizations direct or indirect. However, the results revealed support for a model like the MSPM since it took participants longer to understand the indirect meaning of non-conventional indirect speech acts than to understand the direct meaning in a context where both direct and indirect speech act meanings were possible.

This indicates that listeners will derive the direct meaning in context first, until it appears this meaning is unsatisfactory in context. It is only after direct meaning fails to capture context, as cued in the experiment by an indirect speech act characterization, that listeners seek out additional meaning by attempting to interpret the indirect speech act meaning.

The second experiment had two major goals in testing the adequacy of the MSPM: first, to replicate Shapiro and Murphy's (1993) first experiment that supported a model like the CDM and second, to test the influence of conventionality on the processing of indirect speech acts. Experiment 2 utilized Shapiro and Murphy's methodology that assumed that the presence of indirect meaning might interfere with the judgments of direct meaning. In terms of predictions by model, the MSPM would propose that since direct meaning is computed before any indirect meaning, the presence of indirect meaning would not influence judgments of direct meaning. A model like the CDM would propose that since meanings are selected or constructed from context and that multiple meanings are possible and likely (at least given a construction sort of CDM), the presence of indirect meaning would influence judgments of direct meaning.

Dealing with the first goal of the experiment first, testing the overall model of indirect speech act processing, the findings of the second experiment were somewhat consistent with the Shapiro and Murphy (1993) result. Though the significant differences found by Shapiro and Murphy were only present in this investigation when all judgments (correct and incorrect) were considered, and were not present when only correct judgments were used (as they were in the Shapiro and Murphy experiment), the overall trend in the data was the same as that discovered by Shapiro and Murphy. This then would appear to support a model like the CDM since the current experiment demonstrated that the processing of direct speech acts took longer in conditions where indirect meaning was also present. And so, this result appears to directly conflict with a model like the MSPM, since despite its sensitivity towards issues of c_{direct} and $c_{indirect}$ meaning, it does propose that c_{direct} meaning must be processed before any $c_{indirect}$ meaning. This does not seem to be what the experimental results demonstrate.

However, I believe it would be premature to make any conclusions from this experiment in terms of what sort of model explains processing. The results of experiment 2

overall show that Shapiro and Murphy's (1993) results cannot be perfectly replicated and, actually, casts doubt on the methodology of the Shapiro and Murphy experiment. In the current experiment, there were huge error rates in participant judgments and when only correct responses were used (unlike in the Shapiro and Murphy experiment), no significant differences concerning the hypothesis were discovered (again, conflicting with the Shapiro and Murphy result). While I think it would be incorrect to say that the results indicate anything about processing, the results do indicate at least two things: first, that the experimental results obtained from Shapiro and Murphy are unreliable and second, serious doubts can be raised as to whether the methodology used by Shapiro and Murphy (and replicated here) is an adequate test of indirect speech act processing.

That this experiment demonstrates that Shapiro and Murphy's (1993) result is problematic is fairly clear since the same results were not obtained in this replication. It may be argued that this experiment could not be a real replication, and so does not impair interpretation of the Shapiro and Murphy result, since the current experiment used participants who had some knowledge of pragmatics,

whereas the Shapiro and Murphy experiment used naïve participants. Yet, the participants were selected to remove the counter-explanation of the Shapiro and Murphy result that the task is what caused the differences, not actual processing. Since the knowledgeable participants used here were unable to complete the judgment task in the same way as the naïve participants could, some indirect evidence is found for the competing hypothesis that Shapiro and Murphy's results were obtained based on their instructions to participants. Additionally, since knowledge of speech act theory should not influence cognitive processing of indirect speech acts, these being two very different concerns, the failure to replicate does indicate that the results are unreliable whatever sort of subjects are used. But, most importantly, the results obtained when using knowledgeable participants offers a heretofore unaddressed competing hypothesis: the methodology of Shapiro and Murphy can never test processing stages (or lack thereof), but instead tests how long it takes participants to make judgments about the most plausible meaning.

Upon reconsideration of the instructions given to the participants it is apparent that what they are told to do

is judge whether direct meaning is plausible. Before beginning the experiment, in both the original experiment and this replication, they were instructed about indirect acts and completed a series of test trials. Based on the task and practice session there is every reason to believe that the participants would be encouraged to search for indirect meanings and then determine whether direct meanings were plausible. Therefore, the nature of the task in experiment 2 would encourage the activation of multiple meanings. Since the participants were instructed to determine whether direct meaning was plausible, it appears they were forced to access the direct meaning and any potential indirect meaning in order to determine whether the direct meaning was "likely". So, participants considered as many meanings as possible when making their judgments.

This can be demonstrated by the results of the analysis of experiment 2 where all judgments, correct and incorrect, were used. Here, it was discovered that when indirect meaning was plausible, determinations of plausible direct meaning were slower than where there was no indirect meaning also plausible. Shapiro and Murphy explained this result as showing that the presence of indirect meaning

slows judgments of direct meaning plausibility, since in their experiment the same finding (using only correct judgments) was discovered. Of course, this was taken to show that direct meanings could not be processed first since, if that were the case, the presence of indirect meaning should have no bearing on understanding direct meaning.

However, it can also be taken to show that understanding more than one meaning takes longer than understanding one meaning alone. The significant finding in both the original experiment and the pooled data from this experiment that direct meaning plausible/indirect meaning plausible takes longer to judge than any other category seems to support this potential explanation since this category is the only one where there is more than one meaning present. And this supports the contention that participants were utilizing all possible meanings in making judgments of plausibility of direct meaning. What it does not demonstrate however is that indirect meaning is computed simultaneously with direct meaning, nor anything else about processing. Again, remember that the judgment task concerned making an assessment of whether direct meaning was plausible (was seriously intended). To make

this judgment indirect meaning must also be understood (if present) and then compared to direct meaning in order to truly assess whether a speaker could have really seriously intended to communicate the direct meaning of an indirect speech act. So, participants are encouraged to understand all potential meanings of an act and only then to consider whether a direct meaning could be seriously meant. Therefore, the task is really measuring how long it takes to make those sorts of judgments, not whether direct acts are computed before indirect acts.

The finding that when all judgments were used the only condition that was judged faster was the condition where both direct and indirect meanings were implausible also supports this conclusion. Since the task indicated that participants should determine plausibility of direct meaning and the participants should have realized that all examples except those from the no direct and indirect meaning condition could be indirect speech acts, the non-significant differences in the ratings demonstrate they were processing both possible meanings and then making a decision of whether the direct meaning was plausible. Only in the case where there was no meaning did they make quick judgments, apparently simply deciding that there could be

no direct meaning as these examples were not indirect speech acts, but more or less nonsensical.

One might argue that this explanation is inconsistent. If participants were forced to process all possible meanings of an utterance then the meaning conditions should not have been significantly different from one another. In other words, it should take just as long to discover that plausible direct meaning/implausible indirect meaning has plausible direct meaning as it would to discover plausible direct meaning/plausible indirect meaning has plausible direct meaning since any possible indirect meaning must be considered. So, even in the cases where there is no indirect meaning, listeners should still be searching for it and trying to understand it, therefore there would be no differences in judgment times. However, there is no real inconsistency here. It would be impossible to calculate or understand indirect meaning in the +D/-I items as there is no indirect meaning that can be understood in these items. In fact, it appears that the relative speed with which the participants made their judgments of the +D/-I only reflect that the competing hypothesis is correct: judgments of plausibility of direct meaning are more difficult when indirect meaning is present (i.e., it takes longer to judge

direct meaning when more than one meaning is present). This of course demonstrates nothing about what sort of meaning is processed first. Therefore, the results of the replication call the methodology into doubt in a way different from those ways discussed in Chapter 3. It appears that the Shapiro and Murphy (1993) experiment and the replication presented here rely on a task that can simply never measure processing time, but only judgment time, a clearly different issue.

Nonetheless, the second experiment was also interested in the effect of conventionality on the processing of indirect speech acts. Originally, Shapiro and Murphy (1993) considered that the use of conventional indirect speech acts may have influenced their results, but rejected that conventionality had anything to do with their experimental results since no prior experimental work had ever proven that conventional indirect speech acts were differentially hard to process. As discussed in Chapter 3, this is not a conclusive counter-argument since Gibbs' research (1983) did find conventionality influences processing and other research on conventionality suggests processing of conventional indirect speech acts is a special process. Despite conclusions about the problematic

methodology and the interest in achieving a straightforward replication discussed above, another reason to replicate the Shapiro and Murphy study was to consider the effect of conventionality on the processing of indirect speech acts. It was hoped that the results of experiment 2 could shed some light on whether conventionality influences cognitive processing of indirect speech acts and whether conventionality was really a strong competing explanation for the Shapiro and Murphy results.

Unfortunately, the results of experiment 2 do not provide any conclusive evidence for the role conventionality plays in the processing of indirect speech acts. Though it is true that in experiment 2 no significant differences were found between conventional utterances and non-conventional utterances in terms of response times for judgments of the plausibility of direct speech acts, which seems to indicate that conventionality is not an important factor in processing indirect speech acts, interpretations of these results as conclusively demonstrating anything about conventionality is problematic.

The first reason to be concerned about what experiment 2 shows about processing conventional speech acts is that

the only conventional factor used to delineate conventional from non-conventional sentences in experiment 2 was conventional construction of sentences or conventional form. A glance at the materials shows that many of the non-conventional items could also be conventional, just by a different standard. For example, in the -D/+I category, "Where did the time go?" is a fairly standard expression and can be considered conventional on other criteria; for example, it is conventional because of its use. If a broader conception of conventionality than sentence form is utilized, most of the examples within the -D/+I category were conventional in some way. Because of this potential confound, and utilizing all the judgment data, perhaps no differences were found because the examples were all conventional in some way, therefore systematically confounding any interpretation.

The second reason to conclude that experiment 2 does not really demonstrate anything about processing conventional indirect speech acts is illustrated by the results of the error analysis. What this result shows is that there was no clear criteria being utilized for judgments of plausible direct meaning. With no clear criteria, it is impossible to make judgments about the

influence of conventionality, or in fact, any conclusions about what this experiment really shows. What the error analysis certainly shows is that participants were many times making judgments inconsistent with the stimuli categories. It could be that some participants were utilizing knowledge of speech act theory to make distinctions, others using intuitive feelings about what could be intended by a speaker. It seems that it is likely that the knowledge of speech acts explains the results since it seems only people who knew about speech acts would consistently believe direct meaning was plausible in sentences like "Do you have a brain?" and "Is there any place safe from the cold?".

Not all is lost however, as the results of experiment 2 may actually indicate something about the influence of conventionality after all. If it is assumed that most, if not all, the examples in the +D/+I and -D/+I categories are conventional in some way, then it can be concluded that conventionality does influence processing. Since it took longer to judge these categories when the pooled data is considered it appears the conventionality interferes with the ability of listeners to make clear judgments about what the actual, most intended, most plausible direct meaning

is. The high error rates in these categories also reflect this. So, at least, some tentative support can be garnered for the contention that conventionality has an effect on processing.

Additionally, though these results do not directly support the notion of c_{direct} and $c_{indirect}$ meanings as distinct from l_{direct} and $l_{indirect}$ meanings, it could be that the reason participants had such a difficult time making judgments of direct meaning stems from confusion about what categories (i.e., c_{direct} or l_{direct}) were supposed to be utilized in making judgments. Given that participants were used who understood indirect speech acts from a theoretical perspective (and therefore have knowledge of the difference between l_{direct} and $l_{indirect}$ meanings), but who were asked to judge what meaning was most likely (encouraging c_{direct} and $c_{indirect}$ interpretations), this confusion could easily ensue. So, perhaps, the existence of such distinctions as cognitive and logical indirect speech acts is in fact tenable.

In any case, what this experiment overall appears to demonstrate is simply that participants can access multiple meanings of indirect speech acts when instructed to do so and because of the stimuli and nature of the experiment, it

really does not support any particular model of indirect speech act processing. However, the results of experiment 1, taken with the extant empirical support and given the irrelevance of theoretical criticism for the SPM and the objections against the CDM, seem to support the MSPM model. Even though not much can be concluded from experiment 2, the results of experiment 1 are clear. In the case of non-conventional indirect speech acts, it appears listeners begin understanding an indirect act by first understanding direct speech act meaning and only when necessary, attempt to understand indirect speech act meaning.

Implications for Experimental Pragmatics

The implications of the current experiment cast doubt on earlier research that concluded the CDM was the best model of processing. Instead, it is suggested here that a modified version of the SPM most accurately describes indirect speech act processing. Of course, further experimental work must be done.

As a first step, replications of the experiments presented here should be conducted to ensure the results are accurate. However, as it stands, only experiment 1 should be replicated. As discussed, the analysis of experiment 2 revealed that the methodology of the Shapiro

and Murphy (1993) experiment is seriously flawed and will never clearly measure indirect speech act processing. Though the idea is interesting, and the methodology seems appropriate for its original purpose of testing metaphor comprehension, asking participants to judge the plausibility of direct meaning forces the comprehension of indirect meaning as well. This means that we could never use this sort of methodology to isolate processing stages, if such stages exist, and instead would only be able to make conclusions regarding how long it takes to make judgments of indirect speech acts.

Nonetheless, the present investigation does allow for the development of a systematic program to begin answer the question of how people understand indirect speech acts. Currently, this investigation only provides support for the idea that the processing of indirect speech acts occurs in stages. So, only the overall framework for processing is suggested. What specific variables are needed to understand indirect speech acts, what sort of illocutionary force indicating devices are used by listeners comprehending indirect speech acts, and so forth, is an issue that is still open. However, at the bare minimum, it follows from this work that consideration of what sort of

factors occur in processing indirect speech acts must be considered relative to the MSPM.

Additionally, this work points to the need to investigate certain specific variables when investigating the processing of indirect speech acts. First, the role of conventional cues in determining conventionality must be further considered. As was evident in the analysis of experiment 2, and from the review of conventionality in Chapter 3, conventionality is a diverse phenomenon that has never been fully studied in empirical work. Though some research has been conducted, conventionality remains a loose concept - work that specifies what counts as conventionality and how conventionality truly influences processing must be done.

Also, this research has shown that whenever experiments are done on processing of indirect speech acts, it is essential that a distinction be maintained between conventional indirect speech acts and non-conventional indirect speech acts. Though other researchers, like Gibbs (1979, 1986c), have pointed out indirect speech acts must be studied in context, and have made much of this distinction, little has been said about the differences that could be expected in the processing of conventional

and non-conventional indirect speech acts. The present work shows that differences likely exist in processing of these acts and so strict attention must be paid to what sort of indirect speech acts are being used in experiments and what sorts of conclusions about processing can be drawn from any experiments.

Implications for Speech Act Theory

Overall, this paper has been concerned with attempting to test and formulate an adequate model of speech act processing. This is clearly a psycholinguistic concern as the focus is on how, generally, listeners come to understand the meaning of indirect speech acts. Of course, the ideas proposed and tested here concern only the abstract framework for processing, yet certain conclusions were drawn as to the overall picture of the processing of indirect acts. And these conclusions point to a model like the MSPM as the most comprehensive and correct explanation of how all indirect speech acts were processed.

The development of this model is clearly reliant on insights from pragmatic theory - notably speech act theory - that proposes abstract stages that listeners use to understand indirect speech acts. It is typical in the work done on experimental pragmatics to use pragmatic theory in

the sense that insights from pragmatics inform processing models and experiments. However, it is less common to see how results of experiments on processing can speak to pragmatic theory.

Common or not, the results of these experiments do offer some input to speech act theory at large. Before continuing, it is important to be clear that not all speech act theory is at all concerned with actual cognitive processing. Though the question, "How do I understand you when you speak words to me?" is a question that almost all pragmatics is concerned with, in "pure" pragmatics, which Searle's (1969, 1979) theory could be a part, the issue for study is what is meaning, not how meaning is cognitively understood. This is a fine-grained distinction, one that perhaps is reminiscent of the differences in prescriptive or normative theory and descriptive theory, but one that should be highlighted so conclusions from this work are clear.

As far as pure pragmatics goes, the work from any branch of experimental pragmatics is not very relevant. The philosophical concerns of pure pragmatics, such as the philosophical basis of intention, or the truth-functionality of meaning, and so forth, are not informed by

advances in how cognition works. Yet, not all pragmatic theory is concerned with such issues. To the extent that pragmatic theories of speech acts, like Bach and Harnish's (1979) theory of speech acts, are concerned with how meaning is determined by individuals through cognitive variables, then experimental pragmatics is relevant. However, in this work little was said about what specific inference processes, attitudes, mutually understood beliefs, or cognitive variables influence the understanding of direct and indirect speech acts and this would be something of imminent interest to more descriptive pragmatic theories that discuss how meaning is truly understood. Nonetheless, this work does provide two things for descriptive pragmatic perspectives on speech acts. First, a model like the MSPM supports inference theories of indirect speech act understanding. Since this is an issue that has been hotly contested by scholars (see, e.g., Levinson, 1983), it is interesting to note that theories of indirect speech acts must have some inference component if they are to have descriptive validity. Second, this offers a reaffirmation of certain speech act theories. For instance, any speech act theory that assumes a multiple act conception (one speech act performed by way of another) or

argues that components of meaning of indirect acts are understood partly in reference to direct acts (like Clark and Schunk's (1980) contention that the politeness of indirect speech acts is dependent on the direct act performed) would be supported by the sort of findings presented here.

Conclusion

As mentioned in the beginning of this paper, any sort of model that suggested that a listener comes to understand the meaning of an indirect speech act by first understanding its direct meaning was widely believed to be absolutely incorrect in practically every way. However, this investigation shows that it is much too soon to abandon a model that suggests direct meaning may have computational priority. The theoretical criticisms lodged against the SPM, the exemplar model for positing direct meaning has priority in the processing of indirect speech acts, were demonstrated to be faulty. Critics relied too heavily on a particular conception of the SPM where literal meaning would be a first processing step and this objection is simply irrelevant when discussing indirect speech act processing. A listener understands an indirect speech act not by first calculating its literal meaning and then

immediately proceeding to understanding its indirect meaning, but first must understand its direct meaning. The concepts of direct speech act meaning and literal meaning are not interchangeable, and, as demonstrated, render any criticisms relying on this conception irrelevant.

Further, when literal meaning was not taken to be synonymous with direct speech act meaning, theoretical criticisms of the SPM were only applicable to one particular view of indirect speech acts. The conception challenged was one where direct speech acts were not considered as synonymous with literal meaning, as classically conceived, but somehow synonymous with, and fully determined by, sentence form or "mood". This is a possible interpretation of the speech act theory proposed by Searle (1979), an interpretation most closely associated with Levinson (1983) in his extensive criticism of Searle's theory, but one that is not applicable when really discussing how indirect speech acts are understood. Even Searle (1979) makes clear that a direct speech act must be understood in relation to mutually understood beliefs or felicity conditions and could not be determined by its sentence form alone. Sentence form is nothing more than an illocutionary force indicating device and therefore gives a

clue to what direct speech act may be intended. Any criticisms of the SPM that presuppose the SPM is committed to only that version of how speech acts are understood were shown to be irrelevant when discussing the issue of indirect speech acts processing. The understanding of an indirect speech acts must proceed from the understanding of a direct speech act, but a direct speech act is understood by more than simply sentence form. So, any criticism that amounts to proposing indirect speech acts are not understood by first understanding sentence form is only particular to one interpretation of speech act theory and not applicable to explaining indirect speech act processing when direct acts are understood via felicity conditions or mutually understood beliefs.

However, empirical work did demonstrate that the SPM was still an untenable model. Since the empirical work demonstrated the failure of the SPM, some researchers concluded that a model that allows the computation/construction/selection of all plausible meanings from context, a model like the CDM, was correct. Yet, all the extant research actually demonstrated was that conventionality is a problem for the SPM since all it demonstrated was that the conventionally associated

indirect meaning of conventional indirect speech acts were understood before any direct meaning. A minor modification to the SPM, which preserves processing stages, but allows the conventionally understood indirect meaning of conventional indirect speech acts to be processed before direct meaning through the suggestion of c_{direct} and $c_{indirect}$ meanings may save the SPM.

Two experiments were conducted to test this modified model, the MSPM, and two research questions were investigated. The first question concerned how non-conventional indirect speech acts are processed. The second concerned the place of conventionality in the processing of indirect speech acts. The first experiment unequivocally supported a model like the MSPM. Unfortunately, the second experiment indicated nothing about indirect speech act processing. However, interpretations of experiment 2 did demonstrate two interesting things. First, the results indicate that earlier experimental support of the CDM cannot be replicated. As no other experiments truly tested the CDM, but instead were concerned with refuting the SPM, no direct experimental support exists to indicate the CDM is the correct model. Second, a tentative conclusion can be drawn

that suggests c_{direct} meanings exist and conventional indirect utterances are difficult to interpret in a way consistent with theoretical notions of indirect speech acts. The large error rates of participants experienced in speech act theory show this to be the case.

Overall, this investigation suggests and supports the conclusion that the MSPM, or a model like it, is correct in explaining how indirect speech acts are processed. According to this model, the processing of indirect speech acts occurs in three stages, but processing proceeds from an initial determination of the best meaning of an utterance on a particular occasion, the c_{direct} meaning. For indirect speech acts, that would mean processing begins by a listener's determination of direct meaning. When processing non-conventional indirect speech acts, this direct meaning would be the meaning interpreted by reference to any illocutionary force indicating devices and to some set of mutually understood beliefs (so $c_{direct} = l_{direct}$ and $c_{indirect} = l_{indirect}$). In the case of conventional indirect speech acts, the best meaning would be the meaning that is conventionally associated with the meaning of the indirect act (so $c_{direct} = l_{indirect}$). This is an important finding as models that propose any sort of stage-type

processing have been seriously attacked as unworkable. At the very least, this investigation shows that this general criticism is invalid and that further consideration of stage models for pragmatic processing, models like the MSPM, is warranted.

APPENDIX A

EXAMPLES FOR PROCESSING EXPERIMENT

Context is same for all four conditions. First two are responses to an utterance that is indirect - the possibilities reflect the direct and indirect possibilities for that utterance (e.g., indirect request with direct question and indirect request). Next two are direct acts which pertain to the indirect and direct possibilities for the indirect act (e.g., a direct request in same context and a direct question in same context). The texts were presented in "chunks" -- 4 to 5 words per segment -- and the measurement for this experiment and experiment 2 were on the reading time for "X <verbed> Y's <speech act>" as in "Mike ignored Beth's request".

BETH AND MIKE

Beth and Mike decided to take a vacation to Colorado Springs for winter break. They spent a lot of money on this vacation and have been pleased so far with the town and their hotel. They decided to get room service one morning and while they are eating Beth says, "It's getting cold in here."

Mike ignored Beth's comment and continued drinking his hot coffee.
Mike ignored Beth's request to turn up the heater.

"Colorado Springs is really cold."

Mike ignored Beth's comment and continued drinking his hot coffee.

"Turn up the heater."

Mike ignored Beth's request to turn up the heater.

MARY AND SHARON

Mary, a graduate student, rode her bike to school one Tuesday. Since she had so much work to do on a paper for a conference, Mary decided to stay late in her office to work. She shared an office with Sharon, who was also staying late to work on lecture notes for the class she taught on Wednesday. They had been talking on and off all night. It started raining. Mary said to Sharon, "Are you leaving soon?"

Sharon understood Mary's question and said no, she had more to read.
Sharon understood Mary's proposal that she give her a ride home.

"Have you finished your book?"

Sharon understood Mary's question and answered yes.

"Give me a ride home."

Sharon understood Mary's proposal that she give her a ride home.

JAN THE NUTRIONIST

Jan is a nutritionist at a local hospital. She has three children: Sam, Lisa, and Diane. She was always interested in preparing healthy meals for her family and was always giving them advice about nutrition. One night during dinner she noticed her husband hadn't eaten any of the carrots that were one if the side-dishes she had prepared. She announced to the table, "Carrots are good for you."

Her husband ignored her information since he knew carrots were nutritious.
Her husband ignored her advice and kept eating his chicken and rice.

"Carrots have vitamin A."

Her husband ignored her information since he knew carrots were nutritious.

"You should eat more carrots."

Her husband ignored her advice and kept eating his chicken and rice.

DIANE AND SAM

Diane liked to borrow Sam's car since she liked it better than her own Nissan Sentra. Sam drove a Pathfinder. One day when she came home she left the keys on the kitchen counter. Sam was in the kitchen when he heard Diane yell, "Are the keys on the counter?"

Sam understood Diane's question and answered the keys were in the kitchen.
Sam understood Diane's demand and brought her the car keys.

"Where are the car keys?"

Sam understood Diane's question and answered the keys were in the kitchen.

"Bring me the car keys."

Sam understood Diane's demand and brought her the car keys.

JOHN AND STEPHANIE

It was late at night and John and Stephanie were at a party given by one of John's friends, Brian. Stephanie had just returned from a trip for week and hadn't gotten much sleep the night before. John was having a good time when Stephanie said, "Is it already 12 o'clock?"

John understood Stephanie's question and answered yes, it was 12 o'clock.
John understood Stephanie's desire to leave and they left.

"What time is it?"

John understood Stephanie's question and answered yes, it was 12 o'clock.

"Let's go now."

John understood Stephanie's desire to leave and they left.

LISA AND HER MOM

Lisa was helping her mother pack dishes since they were moving to a new house. Lisa was 18 and was planning on attending the University of Vermont in a month and was busy getting all the stuff she needed to furnish her dorm room. As they were packing up the glassware, Lisa noticed some glasses that she didn't really recognize. She said to her mother, "Do you use these glasses much?"

Her mother understood Lisa's question and said she forgot she owned the glasses.
Her mother understood Lisa's wish to have the glasses.

"Are these brandy glasses?"

Her mother understood Lisa's question and said she forgot she owned the glasses.

"Give me these glasses, please."

Her mother understood Lisa's wish to have the glasses.

SARAH AND MICHELLE

Sarah and Michelle were going out to dance one night and Sarah had recently quit smoking for the third time. As they were driving to the club, Michelle was digging through her new black purse looking for her cigarettes. She turned to Sarah and asked, "Are you still smoking?"

Sarah addressed Michelle's question and said she wasn't still smoking.
Sarah addressed Michelle's request and refused to give her a cigarette.

"Do you have any cigarettes?"

Sarah addressed Michelle's question and said she said no.

"Give me a cigarette please."

Sarah addressed Michelle's request and refused to give her a cigarette.

BETSY AND JILL

Betsy and Jill were pledging a sorority together. They didn't really know each other very well, but had met at the beginning of pledge week. Betsy was tired since she had a long day before rush started and she was tired of walking. As they approached Jill's new car, one that Betsy really liked and had admired before, she said, "Is that your car?"

Jill acknowledged Betsy's question and said her parents bought it for her.
Jill acknowledged Betsy's desire for a ride home and offered her one.

"Is your car new?"

Jill acknowledged Betsy's question and said her parents bought it for her.

"Give me a ride."

Jill acknowledged Betsy's desire for a ride home and offered her one.

SAM AND BOB

Sam and Donald were roommates at the University of Florida. They usually went out every Thursday night - either to the local bar, "Hamilton's", or to a party. Sometimes they went to see a movie before they went out partying. When Bob, one of their friends, saw Sam in the hall this Thursday he asked Sam, "Are you going to the movies tonight?"

Sam ignored Bob's question about the movies.
Sam ignored Bob's request to go to the movies with him.

"Did you go to Michelle's party last night?"

Sam ignored Bob's question and said he was going to study.

"Let's go to the movies tonight."

Sam ignored Bob's request to go to the movies.

RUSS AND THE CD

Russ is visiting John at his new apartment on Euclid Ave. and they are listening to a new CD by a band called "Electric Ottoman". Russ got the CD for free when he went to see the band in a bar in Seattle. The CD is almost finished and John says, "Would you like to listen to something else now?"

Russ ignored John's question and said no.
Russ ignored John's request to listen to another CD.

"Did you get this in Seattle?"

Russ ignored John's question and went to get another beer.

"Let's listen to something else now."

Russ ignored John's request to listen to another CD.

MARCIA AND SUSAN

Marcia and Susan decided to go to a new bar they had never been to before. They were thinking about whether to go to party given by one of Susan's friends later in the evening. The bar was called Blues and they decided to go there because it was new and they thought it may be fun. When they walked in Susan said, "It seems loud in here."

Marcia heard Susan's comment and they sat at a table. Marcia heard Susan's suggestion to leave and they left.

"Let's go now."

Marcia heard Susan's suggestion to leave and they left.

"I like this place."

Marcia heard Susan's comment and they sat at a table.

THE AIRPLANE

John gets on an airplane at Phoenix Sky Harbor Airport. He is on his way to see brother in Las Vegas after a long day at his office. When he finds his seat, he notices through the window that he is next to one of the engines. When the stewardess walks by John remarks, "The engine is making it terribly difficult for me to sleep."

The stewardess ignored John's statement that the engine is loud.
The stewardess ignored John's request for another seat.

"I am going to Las Vegas."

The stewardess ignored John's statement about his travel plans.

"Let me change seats."

The stewardess ignored John's request for another seat.

WEDDING PLANS

Jenny and Frank have been planning their wedding for six months. Jenny wants her wedding in a small chapel and Frank wants the wedding in a large church. This morning they have been trying to decide where it will be held. After visiting four churches that neither of them liked, they found a small chapel in the center of town. Jenny

turns to Frank and says, "What do you think, sweetheart?"

> Frank comprehended Jenny's inquiry and said it was a nice place.
> Frank comprehended Jenny's appeal to have the wedding in this church.

"How much does this cost?'

> Frank comprehended Jenny's inquiry and said he did not know.

"Let's have the wedding here."

> Frank comprehended Jenny's appeal to have the wedding in this church.

TED'S PASTA

Ted is sitting in his favorite Italian restaurant, deciding whether to have the Shrimp Penne pasta or the Angel Hair Marinara. A waiter comes to his table and asks if he is ready to order. Ted says, "How about Shrimp Penne Pasta?"

> The waiter understood Ted's question about whether this dish is good.
> The waiter understood Ted's order for the Shrimp Penne Pasta.

"Does the Shrimp Penne Pasta come with bread?"

> The waiter understood Ted's question about whether the dish came with bread.

"I'll have the Shrimp Penne Pasta."

> The waiter understood Ted's order for the Shrimp Penne Pasta.

BETTY AND FRED

Betty and Fred are watching Law and Order on A&E. Fred decides he is thirsty and gets up to get a glass of water. When he comes back, an important scene is on. He stops in front of the TV to see the scene. Betty says to Fred, "You

are standing in front of the television."

Fred understood Betty's assertion and kept watching the show.
Fred understood Betty's request to move and did so.

"I love Law and Order."

Fred understood Betty's assertion and kept watching the show.

"Please move."

Fred understood Betty's request to move and did so.

JERRY'S ACCIDENT

Jerry is on his way home from work. It's the middle of rush hour, and driving home will take at least an hour. Jerry was thinking about what a great day he had at work when a car hits his vehicle in the rear bumper. Both he and the other driver get out to inspect the damage. Jerry says to the man, "Did you see me in front of you?"

The man ignored Jerry's question and got on his cell phone.
The man ignored Jerry's accusation and got on his cell phone.

"Will you call the police?"

The man ignored Jerry's question and got on his cell phone.

"You hit me!"

The man ignored Jerry's accusation and got on his cell phone.

CARL

Carl is the owner of local butcher shop. He received a large shipment of meat on Monday, but was unable to sell all of it. Since he didn't have any extra room in his store freezer, he decided to take the extra meat home.

When he arrived home on Friday night he began noisily unpacking the meat into a freezer in his garage. His wife heard the commotion and came out to investigate. "Where are we going to put all that meat?" she said to Carl.

Carl ignored his wife's question since he could see that there was plenty of room in his freezer.
Carl ignored his wife's suggestion that he take the meat elsewhere.

"Is that beef?"

Carl ignored his wife's question since he thought it was obvious it was beef.

"Take that meat somewhere else."

Carl ignored his wife's suggestion that he take the meat elsewhere.

JAMES AND DIANE

Diane had been waiting all week for this opportunity. As soon as her boyfriend, James, walked through the front door, she sat him down and tried to explain to him that their relationship was not going as well as she had hoped. After half an hour of talking, the phone started ringing. Diane said, "I need to answer that."

James ignored Diane's statement and waited while she answered the phone.
James understood Diane's request that he leave the apartment.

"I got a new phone."

James ignored Diane's statement and waited while she answered the phone.

"Please leave."

James understood Diane's request that he leave the apartment.

JANE AND DICK

Right after going to the hair salon, Jane had to go to her 3 o'clock anthropology class. She arrived late, and had to take a seat at the back of the lecture hall next to Dick. Jane noticed that Dick was staring at her the whole hour. When class ended, Jane began to put her books away, and Dick walked up to her and said, "Did you just get your hair done?"

Jane acknowledged Dick's question and answered yes.
Jane acknowledged Dick's compliment and thanked him.

"Is there lab section Monday?"

Jane acknowledged Dick's question and answered yes.

"Your hair looks nice."

Jane acknowledged Dick's compliment and thanked him.

SAMANTHA

After a 10-hour shift at work, Samantha picked her children up from school and brought them home. She was tired from waiting tables all-day and decided to sit down on the living room couch in order to rest her feet. Her ten-year-old son, Johnny ran up beside her and said, "Mom, I'm hungry."

Samantha ignored his assertion and took off her shoes.
Samantha ignored his request and turned on the television.

"I played with Bobby today."

Samantha ignored his assertion and took off her shoes.

"Make me dinner."

Samantha ignored his request and turned on the television.

REX

Rex's sixth grade class was trying to gather cans of food for a school food drive. Each classroom in the school took part in the competition. The classroom to bring in the most food would win a pizza party. Rex wanted to win the competition, so he brought in hundreds of cans of food. His teacher looked at the food and said, "How did you manage to get all this?"

Rex understood his teacher's question and said his mom helped him.
Rex understood his teacher's compliment and smiled.

"Did your mother help you get all this?"

Rex understood his teacher's question and said his mom helped him.

"You did such a good job!"

Rex understood his teacher's compliment and smiled.

JUDY

Judy walked into her sister, Maggie's, room. When she entered, she saw Maggie standing in front of her full-length mirror in a beautiful evening dress. Maggie turned around to see a look of awe on Judy's face. Judy said to Maggie, "I wish I had a dress like that!"

Maggie acknowledged Judy's comment and said thank you.
Maggie acknowledged Judy's compliment and said thank you.

"I like that color blue."

Maggie acknowledged Judy's comment and said thank you.

"You look absolutely great in that dress."

Maggie acknowledged Judy's compliment and said thank you.

THE DENTIST

Mary goes to the dentist for the first time in five years. When she goes into the Dentist's office, he has her sit in the examining chair and open her mouth. He takes a metal tool from a nearby cabinet and begins scraping the side of her teeth, carefully removing all the built-up plaque. After a couple of minutes, Mary manages to say, "I thought my teeth were clean."

> The doctor understands Mary's comment and says he has to do the procedure.
> The doctor understands Mary's suggestion and says he has to do the procedure.

"I hate drills."

> The doctor understands Mary's comment and says he has to do the procedure.

"This procedure is not necessary."

> The doctor understands Mary's suggestion and says he has to do the procedure.

PHILLIP

Phillip has just finished work and is getting on the subway to return to his apartment. The train is very crowded and Phillip only saw two open seats. One was next to a man with a brown briefcase. The other was next to a woman, but there was a newspaper on the seat. This reminded Phillip that he had forgotten his book this morning. Phillip was angry because he hated to ride without something to read. He asked the woman, "Is this your paper?"

> The woman ignored Phillip's question and kept looking out of the window.
> The woman ignored Phillip's request to have the newspaper.

"Is anyone sitting here?"

The woman ignored Phillip's question and kept looking out of the window.

"Give me the paper."

The woman ignored Phillip's request to have the newspaper.

APPENDIX B

INSTRUCTIONS AND TEST ITEMS IN EXPERIMENT 2

Instructions displayed on computer terminal:

For this part of the experiment you need to judge whether the sentence you see has a DIRECT meaning or not. You should press YES if you believe the sentence has a PLAUSIBLE DIRECT meaning. You should press NO if you believe the sentence does not have a PLAUSIBLE DIRECT meaning.

You should think of plausible as likely. Basically, you are determining whether the direct meaning is likely.

For many of these, you should be thinking of direct meaning as a question - so you are determining whether the question is what likely, possible, plausible, or intended or whether the question is SERIOUSLY intended to be a question.

Many of the sentences you will see have both direct and indirect meaning like 'Can you pass the salt?' that has the direct meaning question and indirect meaning request. Try to ignore any possible indirect meaning. You are determining only whether something has PLAUSIBLE direct meaning.

Try these for practice.

Practice Items:

+Direct/-Indirect

Does Bill work for Shell Oil?

Where is Balucihistan on this map?

What time is it?

+Direct/+Indirect

Can you pass the salt?

Can you reach that book up there?

Would you like to dance with me?

-Direct/+Indirect

Could you shut up?

May I tell you that jackets are required in this restaurant?

Must you keep doing that?

-Direct/-Indirect

Are you making terminal?

Do purple trees shop?

Can blue televisions fly?

APPENDIX C

EXPERIMENT 2: STIMULUS ITEMS

Experimental Items:

+D/-I

"Where is Sandy this weekend?"

"What was the technical cause of death?"

"What is the capital of India?"

"Is a penguin a bird?"

"Do you have any children?"

"Did you see that show?"

"What is your name?"

"Can rabbits eat apples?"

"What was the verdict?"

What kind of dog do you have?"

"How many are there in a gross?"

"Where do cranberries grow?"

+D/+I

"Don't you think this is exciting?"

"Aren't you ready yet?"

"Are you listening?"

"Can you spell Mississippi?"

"Do you have any money?"

"May I speak to John?"

"Don't you realize how late it is?"

"What is the point of this?"

"Shouldn't you leave that alone?"

"Did you eat all the cake?"

"Why won't you do what I ask you?"

"How difficult could it be?"

Additions to replication:

"Can you tell me the square root of 10?"

"Can you spell Azerbaijan?"

"Do you have my car keys?"

"Can you tell me what time you close tonight?"

-D/+I

"Can you stop whistling?"

"Could she wear any more make-up?"

"Do you have a brain?"

"Can I offer you a drink?"

"Will it ever stop raining?"

"Can't you apologize?"

"Is she going to take forever?"

"Where is my head today?"

"Can you tell me your name?"

"Is there any place safe from the cold?"

"Can you get off my foot?"

"Where did the time go?"

Additions to replication:

"May I remind you your account is overdue?"

"May I ask you to close the door?"

"Can I ask you what the time is?"

"Could you be any stupider?"

-D/-I

"Can text books tell time?"

"Are children like night tables?"

"Can your lamp drive?"

"Is your door in the hospital?"

"Do you have a pink frog?"

"Did you eat a train today?"

"Does your couch giggle?"

"Can your turkey ice skate?"

"Do red grapes drink tea?"

"Will your wall go home for the holidays?"

"Is that alarm clock happy?"

"Can my elbow go with you?"

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