IMPLICATURE COMPREHENSION IN L2

by

ERIN BELTRAN MITCHELSON

(Under the Direction of Don R. McCreary)

ABSTRACT

This thesis investigates how first and second language users comprehend particularized conversational implicature (PCI) in a Gricean framework. Data were collected from 19 native speakers (NSs) and 19 non-native speakers (NNSs) who completed a written dialogue comprehension test. Comprehension accuracy for NNSs was far lower than for NSs. Both groups introspectively reported using Grice's maxims and Cooperative Principle as comprehension strategies and showed a preference for implicature-free speech in L2. These findings suggest that Grice's theory may be operational.

INDEX WORDS: implicature, second language acquisition, Grice, comprehension strategies, conversational maxims, Cooperative Principle

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ERIN BELTRAN MITCHELSON

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ERIN BELTRAN MITCHELSON

Major Professor:	Don McCreary
Committee:	Jonathan Evans
	Charles Doyle

Electronic Version Approved:

Maureen Grasso
Dean of the Graduate School
The University of Georgia
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CHAPTER 1

INTRODUCTION

This thesis seeks to investigate in what ways native speakers (NSs) and nonnative

speakers (NNSs) interpret particularized conversational implicatures, with a special focus on

Grice's Theory of Implicature (1989) as the processing model. It intends to show that Grice's

maxims and Cooperative Principle are operational interpretation strategies. It also intends to

show that NNSs who misunderstand NS intended meanings when they are implied but unstated

do so because NNSs assume literal cooperation on the part of their interlocutors and prefer

speech free from implicature.

As the field of second language acquisition (SLA) pragmatic research regarding the

concept of conversational implicature is small, this thesis will help to fill this field in general. In

specific, it investigates interpretation strategies for inferencing in implicature, as only Taguchi

(2002) has done, and it experimentally tests the operationality of the Gricean theoretical model,

as only Devine (1982) has done. Design advancements come from its multi-method approach; it

uses open-ended response questions as Devine (1982) and Taguchi (2002) did, and it uses

multiple-choice questions as Bouton (1988) first did.

More important than these scholarly contributions, this study will apply to an overlooked

challenge for language learners. Pragmatic competence is crucial to successful intercultural

communication free from misunderstandings, but implicature use is generally not addressed by

second language (L2) textbooks (Bouton 1990). This study can benefit them by adding to the

knowledge base for related applications such as instruction and pedagogical materials development for communications students and language learners.

1.1 - Background

Grice (1989) defined implicature as implying but not uttering intended meanings, when what is meant is not what is said. He proposed a rationalist philosophical model of how such things are produced and understood in conversation. Basic tenets of this model include the Cooperative Principle (that one contributes to conversation in quasi-contractual, reasonable ways – acceptable, appropriate, and timely) and its four attendant conversational maxims: Quantity requiring the appropriate amount of information, Quality requiring truthfulness, Relation requiring pertinence, and Manner requiring perspicuity. When a speaker, in a given utterance, directly complies with all four of these maxims, the Cooperative Principle (CP) is overtly satisfied and the utterance is interpreted literally. At times, though, non-literal interpretations of utterances are appropriate when speakers so intend by the purposeful failure to fulfill maxims, or flouting. Because the implied meanings of implicature-carrying utterances are calculable, or capable of being worked out if interpreted non-literally, they are also cooperative, albeit indirectly. The least formulaic type of implicature is called particularized conversational implicature, which is born of very specific, ever-changing context (Grice 1989). It thus ostensibly carries the heaviest cognitive processing load and would be the most difficult to comprehend, especially for L2 learners (Taguchi 2002).

There are two main authors who have researched this phenomenon within SLA. A summation of the work of Bouton (1988, 1989, 1992, 1994) shows that NNSs do not always accurately interpret NSs' intended implicatures (as low as 79%) but that they can improve over time (most improvement shown between one and several years). Taguchi (2002, 2005, 2007,

2008a-d) extended the previous work significantly by considering many variables in this acquisitional process other than simply comprehension accuracy, including but not limited to comprehension speed, comprehension load, lexical access speed, L2 proficiency level, and learning environment. Most relevant to this thesis is the 2002 piece, in which she researched cognitive inferencing strategies through use of introspective verbal reporting. This type of open-ended response format allowed Taguchi to identify a certain set of reported processing strategies, including keyword recognition and paralinguistic cues, as well as show that higher and lower L2 proficiencies may yield different cognitive inferencing processes in NNS implicature interpretation. Interesting also is her finding here that NNS accuracy in implicature interpretation is nearly perfect when speakers are simply allowed to admit uncertainty. The implicature categories contained in the 24 dialogues of Taguchi's study were limited to Relation maxim floutings, and there were only eight informants, all NNSs. The thesis here intends to expand some of these limitations.

1.2 - Experimental Design

Methods are drawn largely from the work of Taguchi (2002) but also the experiments of Bouton (1988, 1989, 1992,1994), Taguchi (2005, 2007, 2008a-d), and Devine (1982). This study of 38 informants has a written experimental component of selected sample dialogues with comprehension test and survey response. Conclusions are informed by written responses.

1.2a - Participants

Two groups of nineteen human subjects (henceforward informants) each provided the data for this experiment. One group comprises native speakers of English and one does not. All informants have collegiate level English and were recruited from University of Georgia classes and organizations. All subjects were screened for prior knowledge of Gricean pragmatics.

1.2b – Data Collection

I have written five dialogues for use in this experiment. Floutings of each of Grice's four maxims are represented at least once; that is to say, one dialogue primarily shows a manner flouting, another a quantity flouting, etc. Another dialogue is literally cooperative. I contrived these dialogues with the goal of minimizing a need for specific social or cultural knowledge in order to maximize the focus on cognitive processing alone. Open-ended response questions adapted from those in Taguchi (2002) and original multiple choice and Likert scale questions appear on the comprehension test/survey tool to target all research questions.

Sessions mostly of groups but also individuals were conducted as needed, mostly in the Linguistics seminar room in Gilbert Hall and in Park Hall classrooms during Fall Semester 2010. The informants underwent the informed consent process and provided basic demographic and language experience information on a background questionnaire profile. Then the informants completed the printed comprehension test/survey tool, beginning with a trial token for practice and instruction, regarding their interpretation of the speech event/language used in the written dialogues – specifically their comprehension of the target implicatures – and their own use of the forms in question. Informant participation varied between 25 and 75 minutes.

1.2c – Data Analysis

Statistical analysis of survey results and qualitative analysis of the free response sections will inform conclusions. For the survey, emphasis is on raw scores. For free response sections, preliminary analysis is guided by the work of Taguchi (2002) and Devine (1982).

1.2d - Questions

Primarily, this thesis aims to investigate the following original questions:

1 To what degree do informants report Gricean maxim applications as comprehension strategies for implicature interpretations?

2 To what degree can informants naively identify Gricean maxim floutings?

3 To what degree do they naively apply the Principle of Cooperation?

4 In light of these three questions, can Grice's Theory of Implicature be a valid processing model?

5 Do informants prefer speech free from or containing implicature?

6 How do NSs and NNSs compare? How do NLs and L2s compare?

Lastly, this thesis will ask the following basic question, hoping to complement the extant body of literature thereon:

7 To what degree do informants comprehend implied but unstated NS meanings in particularized conversational implicatures?

These questions will be revisited throughout Chapter 4.

1.2e - Objectives

The objectives of this study all follow from the research questions stated above. I hope to prove and/or confirm with this study that:

a) NNSs largely misunderstand NS particularized conversational implicatures.

b) speakers can, indeed, process implicature (here in the interpretation of meaning) according to a Gricean framework of maxims (they correctly identify floutings and do at least sometimes report them as well).

c) all speakers do apply the Principle of Cooperation naturally (in that they produce literally cooperative responses as their recommended way to reply and they describe literal speech and reason its meaning according to the CP).

d) all speakers prefer speech that is free from implicature (especially NNSs, who assume non-flouting on the part of their interlocutors).

These objectives will be revisited in Chapter 5's conclusions section.

1.3 – Structure of the Thesis to Follow

The rest of this paper will consist of four more chapters. The first will be a review of relevant literature (Chapter 2: Review of Relevant Literature). The next will describe the method of the experiment introduced here (Chapter 3: Procedure). Next will follow a presentation of the experimental results and analysis (Chapter 4: Results and Analysis). Finally will come a discussion of the thesis, including (but not limited to) overall conclusions and future directions (Chapter 5: Discussion).

CHAPTER 2

REVIEW OF RELEVANT LITERATURE

2.1 - Questions relevant to this study addressed by this literature review

This chapter will review scholarly literature which touches on the several questions most pertinent that inform the study at hand. They are as follows:

1) What is Grice's theory of implicature? What are its principles and components?

2) How is implicature used in different languages?

3) How do NNSs use implicature in NNLs?

4) How is implicature taught in FL classrooms?

When these foundational questions are addressed, I will then identify some inadequacies in this body of literature that merit future investigation in order to advance the field. Some of these directions are engaged by the study at hand.

2.2 - Grice's approach to conversational implicature

Because the study at hand is a critical investigation of the comprehension of particularized conversational implicature in English according to a strict Gricean framework, this literature review begins with an explanation of the relevant points of Grice's work. The rationalist philosopher Herbert Paul Grice most notably presented his classic approach to implicature theory in 1967 at Harvard University in his William James lectures (Grice 1989). Students and scholars alike found (and find) Grice's concept of implicature very appealing , and "unsurprisingly, it was quickly picked up and put to a wide variety of uses not only in philosophy but also in linguistics and psychology (Saul 2002: 228)."

In investigating how conversation is guided by logic, Grice identified the fact that speakers often imply things that they do not say and that often their listeners know what they mean despite this.

Grice is concerned with this distinction between *saying* and *meaning*, in the way in which speakers know how to generate these implicit meanings, and in the problem of how they can assume that their addressees will reliably understand their intended meaning. His aim is to discover the mechanism behind this process (Davies 2007: 2309).

To take an example I commonly give to my introductory linguistics students, introduced to me by Dr. Sarah Blackwell in her Spanish Semantics and Pragmatics course (2006), I may tell my husband, when he is standing at the refrigerator and I am lying on the couch, "Boy, I'm thirsty!" He may know from hearing this that I'd like him to get me a drink, even though the literal semantic or linguistic meaning of the words 'boy,' 'I'm,' and 'thirsty' have little to do with the words 'get,' 'me,' 'a,' and 'drink.' In other words (and in brief, to be expanded later), the explicit meaning of uttered sentences is often not the intended communicative meaning of their speakers (Ss), as what is meant is often not stated, or is implicit. The literal meaning of the utterance is not the intended meaning, but the intended meaning is still understandable (in the given context with shared background knowledge and a logical working-out schema) (Grice 1989).

He called this phenomenon of implying certain unuttered meanings 'implicature' – a term of his origination. In his own words:

I wish to introduce, as terms of art, the verb *implicate* and the related nouns *implicature* (cf. *implying*) and *implicatum* (cf. *what is implied*). The point of this maneuver is to avoid having, on each occasion, to choose between this or that member of the family of verbs for which *implicate* is to do general duty. Author's italics (Grice 1989: 24)

Thus, in the given example, I was the agent doing both the uttering and the *implicating*, the uttered sentence was "Boy, I'm thirsty!", the *implicatum* was my request to be brought a drink, and my doing so was called an *implicature*.

There are several types of implicatures according to Grice. There are conventional, generalized conversational, and particularized conversational implicatures (Grice 1989). Conventional implicatures are those whose implicata are determined by the conventional semantic meanings of the chosen words in the utterance. An utterance using the word "therefore" implicates that some consequence x is effected by some cause y, or, with the use of the word "some," that not all but indeed more than none of x are implicated (Grice 1989: 25). In contrast, then, conversational implicatures are those whose interpretation relies on the general rules or features of logical discourse. Particularized conversational implicatures are those that occur only in their specific context. That is, it would be unlikely if not impossible for the implicatum to result from the same utterance in any context. Grice admits that the idea of generalized conversational implicatures (GCIs) may be controversial, then, as they can easily be mistakenly categorized as conventional implicatures. Grice argues that this third category is reserved for word choices that usually, but not always, result in the same implicature. Whereas "therefore" should always (thus, conventionally) implicate the cause and effect relationship mentioned above, a word like the indefinite "a" can implicate unfamiliarity with or possessive distance from the noun in question, but it does not have to do so. So, in general, without specific contextual circumstances, "He's meeting a woman" and most utterances of similar format implicate that the woman is a stranger to some degree, but "He lost a shoe" could only refer to his own shoe (Grice 1989: 37-38). Of these three types, particularized conversational implicatures (PCIs) will be the focus of the study at hand.

Knowing that such a phenomenon as implicature exists allows for the exploration of how such a phenomenon works. How is it that Ss can mean things they don't say? How is it that listeners can understand those implied meanings? Grice proposed a rationalist model of

conversational logic, said to be guiding all interlocutors during talk exchanges, to explain this.

In brief, Grice proposed that the Cooperative Principle (CP) governs all utterance production and interpretation in that speakers' contributions must be, or are assumed to be, appropriate to the conversation according to the four maxims of Quantity, Quality, Relevance, and Manner. If an S obeys all four maxims on the surface with a particular utterance, then its explicit meaning matches its intended meaning, and it can be interpreted literally. If an S does not superficially obey all four maxims (failing to fulfill one or more of them), the nature of the S's cooperation may be considered implicit through use of implicature or the S may actually be uncooperative. Because the hearer (H) assumes that S's contribution is cooperative, H can interpret S's implied meaning based on certain implicative patterns of maxim fulfilment failure.

To break this summary down further, first one should return to understand Grice's stated assumption that interlocutors, being *rational*, converse with each other for some context-appropriate *reason*. Such mutual purposefulness must thus be guided by a common logical schema to so achieve the interlocutors' goals. In his own words:

Our talk exchanges do not normally consist of a succession of disconnected remarks, and would not be rational if they did. They are characteristically, to some degree at least, cooperative efforts: and each participant recognizes in them, to some extent, a common purpose or set of purposes or at least a mutually accepted direction. This purpose or direction may be fixed from the start (e.g., by an initial proposal of a question for discussion), or it may evolve during the exchange: it may be fairly definite, or it may be so indefinite as to leave very condsiderable latitude to the participants (as in a casual conversation). But at each stage, *some* possible conversational moves would be excluded as conversationally unsuitable. (Grice 1989, : 26).

Such unsuitable moves are avoided by adherence to "a rough general principle which participants will be expected (ceteris paribus) to observe (Grice 1989: 26)" – his Cooperative Principle. Grice says that the CP dictates of interlocutors to "Make your conversational contribution such as is required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged" (Grice 1989: 26).

To determine such appropriateness of a conversational contribution according to Grice's CP, one relies for analysis on the CP's four basic attendant components, his four maxims – Quantity, Quality, Relation, and Manner, that require description here. Each one will have a definition and example of non-compliance here. Grice also says of the maxims, admitting that his list may not be complete, that "one might need others" (Grice 1989: 27).

Quantity details that one's conversational contribution should be just as informative as is required, not more or less. "The category of Quantity relates to the quantity of information to be provided, and under it fall the following maxims: 1. Make your contribution as informative as is required (for the current purposes of the exchange). 2. Do not make your contribution more informative than is required (Grice 1989: 26)." An example of non-compliance with the Quantity maxim could be the act of underinforming a hiring committee about an applicant's skills in a letter of recommendation by stating simply that he/she attended tutorials regularly, when it is known that the committee wants to learn much more, in order to implicate a poor recommendation (Grice 1989: 33).

Quality details that a contribution should be true, not false or inadequately evidenced. "Under the category of Quality falls a supermaxim—'Try to make your contribution one that is true'—and two more specific maxims: 1. Do not say what you believe to be false. 2. Do not say that for which you lack adequate evidence (Grice 1989: 27)." All instances of verbal irony or sarcasm are examples of breaking with the Quality maxim (at the level of what is said, not what is implied) (Grice 1989: 34).

Relation requires that a contribution be relevant to the conversation, under the single oath "Be relevant" (Grice 1989: 27). When speaking of a friend in a new job working at a bank, someone reporting that he's getting along "quite well, I think; he likes his colleagues, and he

hasn't been to prison yet" (Grice 1989: 24) would be infringing the maxim of Relation when meaning to communicate that he hasn't robbed the place.

Lastly, Manner refers to the way in which something is said rather than the content of what is said, as opposed to the previous three maxims. It requires that a contribution show perspicuity, not obscurity, ambiguity, prolixity, or disorder. (page 27) Saying that someone "sang 'Home Sweet Home'" is perspicuous and thus superficially cooperative, while saying that someone "produced a series of sounds that corresponded closely with the score of 'Home Sweet Home'" shows a lack thereof (Grice 1989: 37).

Again, when an S complies with all these four maxims superficially, she is explicitly cooperating more or less. Grice enumerates four ways, though, that Ss can fail to fulfill one or more of the maxims and thus not be using literal, explicitly cooperative speech. These include violating, opting out, clashing, or flouting the maxims. Grice carefully defines the latter three, as terms of art, but he doesn't clearly define the first and suggests that violation may be a broad term usable for all maxim fulfillment failures. Opting out is a direct refusal to participate in the talk exchange as required, thus evading the maxims and CP. Opting out, or the refusal to cooperate conversationally, can be exemplified by someone saying, "I cannot say more; my lips are sealed. (Grice 1989: 30). Clashes are instances of Ss making face-off decisions between the fulfillments of one maxim over another when context does not allow for both. Clashes would pin the compliance of two maxims against each other in a specific utterance, forcing one to be violated in favor of another being obeyed. For example, one might underinform, violating the Quantity maxim, when answering a question to which they have only a partial answer in order to maintain fulfillment of the Quality maxim by not providing information for which adequate evidence is lacking. A true clash would be a cooperative behavior, creating an implicature. For

instance, if friend A wants to visit friend B on a trip to France with friend C, but A can tell C during itinerary detail planning only that B lives "Somewhere in the South of France," it is likely that A does not know more information than that at that time (Grice 1989: 32). Lastly, and most important to this study, is the idea of flouting, or the blatant decision to violate a maxim that is not due to clashing or opting out. Such overt flouting can be done to uncooperatively mislead, but it can also be done cooperatively with the deliberate intention of creating a conversational implicature. This latter phenomenon is what Grice calls an exploitation (Grice 1989), and exploitations will be the focus of the study at hand. All instances of sarcasm or verbal irony are examples of flouting and, specifically, exploitation.

To reiterate, both clashes and exploitations, which are violations of or failures to fulfill Grice's conversational maxims, can generate conversational implicatures and thus be cooperative in an implicit rather than explicit way. Clashes constitute what Grice labels as the Group B category of particularized conversational implicature types. Exploitations constitute Group C. The examples given above for the violations of each of the three maxims of Quantity, Quality, and Manner apply here; they are Group C PCIs, or exploitations, or floutings that produce PCIs. The third of these PCI categories is Group A, or that in which no maxims have been violated in a "real, as distinct from apparent (Grice 1989: 35)" way, like the example given above for the violation of Relation. Rather, in these instances, "the speaker implicates that which he must be assumed to believe in order to preserve the assumption that he is observing the maxim of Relation (Grice 1989: 32)." That is to say that going to prison apparently has nothing to do with a friend's new job at a bank, but it actually does relate in the sense which the speaker means, which is to imply something along the lines of the fact that stealing cash from an employer bank is tempting and can land a person in jail, so it's good that the friend, who may be dishonest,

hasn't yet succumbed. These are still particularized because these utterances only carry these implicata on very specific occasions under very specific contexts, but they are not full exploitations in Gricean terms. Real exploitations of Relation, according to Grice, "are perhaps rare (Grice 1989: 35)" and are exemplified only by blatant, complete changes of subject in order to generate an implicature. For example, remarking about the weather can bring up a completely irrelevant subject in a conversation, implying that the former subject is no longer desirable to the speaker, for whatever reasons (Grice 1989: 35).

Knowing all this now about implicature, a fuller definition of the term can be had. In Grice's words:

I am now in a position to characterize the notion of conversational implicature. A man who, by (in, when) saying (or making as if to say) that *p* has implicated that *q*, may be said to have conversationally implicated that *q*, provided that (1) he is to be presumed to be observing the conversational maxims, or at least the Cooperative Principle; (2) the supposition that he is aware that, or thinks that, *q* is required in order to make his saying or making as if to say *p* (or doing so in *those* terms) consistent with this presumption: and (3) the speaker thinks (and would expect the hearer to think that the speaker thinks) that it is within the competence of the hearer to wrok out, or grasp intuitively, that the supposition mentioned in (2) is required. Author's emphasis (Grice 1989: 31)

In the simplest of terms, conversational implicatures can exist when (1) S is observing the four maxims and the CP and (2) the implicatum is necessary for the utterance to be so cooperative. What's more, this implicature requires (3) that H can calculate (2).

In this way, H can calculate what the intended meaning, *q*, of *p* is when H recognizes that *p* violates a maxim (or apparently does so) by searching for what would make *p* cooperate in that specific discourse's context. Through this, Grice suggests, true to his rationalist self, that there is a working out schema or calculability assumption followed by the interlocutors during every conversational implicature. In Grice's own words, H will calculate of S:

'He has said that *p*; there is no reason to suppose that he is not observing the maxims, or at least the Cooperative Principle; he could not be doing this unless he thought that *q*; he knows (and

knows that I know that he knows) that I can see that the supposition that he thinks that q is required; he has done nothing to stop me thinking that q; he intends me to think, or is at least willing to allow me to think, that q; and so he has implicated that q.'(Grice 1989: 31)

This scheme describes a contractual relationship of expectation, participation, and logic on the part of interlocutors in any discourse. If either S or H goes awry, miscommunication can occur. It is important to Grice because he suggests that without this working out, q is a conventional, not conversational implicature. It is important to this study because it reveals Grice's take on a cognitive processing model for interpretation. The foundational base of this processing ability is the intuitive understanding of Grice's four conversational maxims and CP, against which the S's words are analyzed for appropriateness and thus meaning. If Grice is correct, then Hs who correctly calculate implicata have used their knowledge of the four maxims and CP to do so. This premise is key to the study at hand.

It is important to note, especially going into the next section of this paper, that Grice's work was, disciplinarily, philosophical rather than linguistic. He was interested in his implicature theory proposal – and in conversational pragmatics generally – not as a paradigmatic linguistic model of a language phenomenon but rather as a tool of logic for furthering rationalist philosophical inquiry. Such acknowledgement helps to place his work in academic context, allowing room for expansion if not improvement of the theoretical model, and thus removes the bite out of much of its popular critique (Davies 2007). My study will, however, attempt to approach Grice's philosophical theory as a linguistic model, as an investigatory exercise and also as an inquiry into its validity.

2.3 - Intercultural implicature use

 "In the past several years, linguists interested in the interpretation of whole utterances have made use of a number of concepts developed by philosophers – concepts such as speech act, illocutionary force, and performative… In particular, there has been a great deal of discussion centering around ideas of Paul Grice… In developing such notions, philosophers likely reflect on

conversational conduct as it operates in their own society. The qualification is not explicit however, and principles of conversational procedure are presented as universal in application. (Keenan 1976: 67)

Here Keenan picks up on the common thread of argument that treating philosophy as linguistic or social science should be done, at least, carefully, as referenced above from Davies (2007), and states her criticism of Grice's theory: its presented assumption of universality is falsified, or at least prematurely complicated, by its Anglocentricity. Keenan (1976) then offers a challenge to to the wholeness and validity of Grice's theory by investigating its applicability to a non-Anglophone people, focusing on use of the Maxim of Quantity.

Through ethnographic report of Malagasy speakers in Madagascar's plateaus, Keenan (1976) says that Malagasy speakers regularly underinform their interlocutors. It's a deeply rooted social practice, a standard. She reports that they do so because speakers are reluctant to reveal new information. Various examples include not wanting to commit themselves to statements that may prove false – whether instructions on how to open a door, the dates of a planned event, or pointing blame at a wrongdoer – in order to avoid possibly losing face or creating guilt or shame for one's self or another. (I will ignore in this paper Keenan's sections on personal reference, etc., which relate to GCIs much more so than to PCIs, the focus of my thesis.) She thus claims that speakers are not expected to be informative.

Keenan uses this ethnographic information to interpret Malagasy use of Grice's Maxim of Quantity. She says that, because underinforming in Malagasy is not motivated by a speaker's desire to implicate that they do not know more, as can be the case in English when a clash exists between Quality and Quantity (see example above about a trip to France), then the Maxim of Quantity does not apply to this language or society. She concludes that this maxim is Anglocentric and thus Grice's theory is not universal. She says instead that Grice's theory offers

a framework in which the conversational principles of different speech communities may be compared. We can, in theory, take any one maxim and note when it does and does not hold. The motivation for its use or abuse may reveal values and orientations that separate one society from another and that separate social groups… within a single society… The value of Grice's proposal is that it provides a point of departure for ethnographers who wish to integrate their observations, and then propose stronger hypothesis related to general principles of conversation. (Keenan 1976: 79)

I interpret Keenan's ethnographic information quite differently in a Gricean sense. I find

her analysis of Grice often to be riddled with misunderstandings. For example, Keenan at one

point exemplifies her central theme, the holding back of certain information in Malagasy, with

the response of an indirect double negative to a request for instructions on how to open a door –

"'If one doesn't open it from the inside, it won't open'" (Keenan 1976: 71). This is clearly not a

case of underinforming (the required information is present – the door opens from inside –

Quantity has not been infringed), but rather a textbook case of infringing the Maxim of Manner,

because it is not perspicuous (it can be considered prolix, obscurely expressed, maybe

ambiguous or disorderly). Improper application of Grice's maxims to the analysis of one's data

lends discredit to one's findings.

Her interpretation of informativeness may also be a misunderstanding of Grice.

The maxim as it stands is not helpful, for it can never be violated. The constraint 'required by the exchange' can be stretched to justify the kind or amount of information in each given case. For example, a speaker may provide information that intentionally confuses or misleads the hearer, but one could include the speaker's intention to deceive as part of the definition of the exchange. The speaker, conforming to requirements of the exchange so defined, would not be violating the maxim: 'Be informative.' … The speaker in each case would be conforming to the requirements of the exchange as defined by himself or by social convention. (Keenan 1976: 68-69)

There are two major problems here in this part of her analysis of Grice, the first being the

falseness of the idea that S intentions alone can define the requirements of a talk exchange. The

same goes for the opposite case; H expectations alone cannot define the requirements of an

exchange. The Maxim of Quantity is flexible, to the extent that H & S agree upon it.

The second problem with her Gricean analysis is that social convention, does, indeed, shape the requirements of talk exchanges. According to Grice's premise of calculability,

the hearer will rely on the following data:… (3) the context, linguistic or otherwise, of the utterance; (4) other items of background knowledge; and (5) the fact (or supposed fact) that all relevant items falling under the previous headings are available to both participants and both participants know or assume this to be the case. (Grice 1989: 31)

This says that interlocutors must share the same contextual and background (i.e. cultural) knowledge in order to calculate meaning. All of this encompasses Keenan's key variables of interlocutor familiarity and sex/gender and the significance status of new information. According to Grice's very definition of the CP, one's utterances should contribute to the talk exchange's "accepted purpose or direction" (Grice 1989: 26). He does not dictate what purpose or direction each talk exchange in the universe has.

Immediately then, though, Keenan negates this speaker-centered argument by saying,

Grice… presents a more precise interpretation [of the Maxim of Quantity]: Interlocutors are expected to meet the informational needs of their interactional partner(s). That is, if a speaker has access to the information required by the hearer, then he is expected to communicate that information to the hearer… The maxim leads one to expect that when one interlocutor requests specific information, the conversational partner will provide that information insofar as able. The verbal response to such a reply may conversationally imply what the utterer knows about the material requested. (Keenan 1976: 71)

She then references an example where an English speaker's lack of certainty in regards to the Maxim iof Quality clashes with Quantity, and thus infringes on Quantity in response to preserve Quality. She is underestimating the power of Grice's very definition of conversational implicature (see above), which relies on interlocutors' co-construction of meaning based not just on maxim adherence but also on shared background knowledge and context. For instance, underinforming in English does not always or only carry an implicatum of not knowing more due to a clash with Quality. It may have many meanings, depending on the context, such as that a surly teenager who only answers, "Fine." to his mother's sincere request for a full description

of how his day was may be implicating through exploitation of the Maxim of Quantity something like, "Buzz off." It seems that just this kind of indeterminacy applies to Malagasy as well as English. As Grice puts it, when calculating the meaning of an utterance that does not obey all maxims, "there may be various possible specific explanations, a list of which may be open (Grice 1989: 40)." From the evidence reported here, the Malagasy seem actually to be following Grice's Maxim of Quantity very formulaicly in accordance with their own cultural norms. If one does not expect informativeness of their interlocutors, then underinforming is not at all in violation of the Maxim of Quantity; it is, in fact, abiding it. To provide specific information would be to overinform, possibly in abject violation of the maxim and thus socially taboo (as Keenan explicitly describes of women under her study) or perhaps to generate an implicature on the other end of the scale..

"If a European knows the name of an individual or time or place an event is to take place, he normally specifies this in his utterance. A Malagasy speaker normally does not specify these things. The expectations of interlocutors, then, differ in the two societies. And consequently, conversational implicatures differ in these societies (Keenan 1976: 75)." If the expectations of interlocutors differ, as Keenan admits, then levels of Gricean informativeness are also expected to differ accordingly. Grice's theory does not preclude this. In fact, it supports this, as evidenced when Grice says, "Make your contribution as informative as is required (for the current purposes of the exchange)" (Grice 1989: 26).

She has not actually disproved Grice's conversational principle. I think in fact that she has proven it. She has just proven that English cultural contexts cannot be used to speak Malagasy.

2.4 - Studies of implicature use and acquisition in L2

As a response to the work of Grice and Keenan, Devine (1982) was the first author to experimentally investigate L1 and L2 implicature use. Her goals were to 1) "assess the universality of the conversational principles delineated by Grice (Devine 1982: 195)" and 2) "to evaluate the relative importance and applicability of the conversational principles for speakers from differing cultural groups (Devine 1982: 195)."

For this first endeavor, Devine developed a 15-item tool, "adapted from or following Grice (Devine 1982: 205)", composed of "brief descriptions of fifteen situations, each of which contained an example of conversational implicature (Devine 1982: 196)". Informants were asked to read these and paraphrase each in writing, the research assumption being that, if Devine's interpretation of Grice's theory is correct and the implication is the utterance's real meaning, the implicatum would be detailed in the paraphrase (1982: 196). Five NSs participated in a pretest. The study had a total of thirty informants, fifteen being L2 English learners taking an advanced class at the English Language Center of Michigan State University, and 15 being American students of Michigan State University. The NNSs came from various L1 backgrounds (Spanish, Korean, Farsi, Japanese). The informants' written responses to the 15 items were evaluated by two researchers. If there was an evaluative disagreement between these two, a third researcher came in, also.

Three items on this test (numbers 1-3) were designed to exhibit PCIs "where there is no apparent or obvious violation of a maxim" or where there is an "unstated connection between remarks" (Devine 1982: 197) – what Devine calls Type I and what Grice (1989) calls PCI category Group A. Item number 4 is the only item on this test designed to exhibit an implicature born of a clash between two maxims, or what Devine calls Type II and Grice (1989) calls Group

B. Items number 5-15 are designed to exhibit what Devine calls Type III implicatures and defines as flouts. Grice (1989) would call these PCIs of the category Group C, exploitations (specifying from non-implicature-generating flouts). For example, as this tool's thirteenth item describes, if Mary sings Song X at a party while Sue plays it on the piano, and later Sue answers a question about which song Mary sang that night by saying that Mary "produced a series of sounds that corresponded somewhat with the sounds of (Devine 1982: 205)" Song X, then she is not only answering the question, but she is also implicating, through flouted exploitation of the Maxim of Manner, her low opinion of the quality of Mary's singing.

Devine reports that of the three "types" of PCIs tested, Type I and Type II showed much similarity in comprehension accuracy rate between NSs and NNSs, unlike Type III (1982). For Type I, 64% of NSs and 60% if NNSs were recorded as accurate, while 22% and 20% were recorded as inaccurate. For Type II, 86% of NSs and 80% of NNSs were recorded as accurate, while no one was recorded as misunderstanding. For the Type III implicature items, the results are broken down per maxim, and each shows a greater difference between NS and NNS results than for either Type I or II. Flouts of Quantity showed the worst accuracy levels overall, with only 56% of NSs and 20% of NNSs being recorded as accurate and 37% of NSs and 71% of NNSs being recorded as inaccurate. Floutings of Relation showed the highest accuracy level overall, with 96% of NSs and 70% of NSs being recorded as accurate while no one was recorded as inaccurate. She concludes that both groups are "aware of the conversational rules which are being manipulated to create implicature" (Devine 1982: 201) following Gricean logic. She also concludes, based on low NNS accuracy rates, that, for NNSs, the Maxim of Quantity and perhaps the Maxim of Relation, which showed the second worst accuracy rate, do "not have the same status or applicability as the other conversational postulates proposed by Grice (Devine

1982: 201)." These apparent contradictions led her to conduct a follow-up study, described below.

For Devine's second study, I want to report that I do have some serious concerns about the experimental design that cause me to question these findings. First, there is only one item representing Type II PCIs, or clashes, from which wide general conclusions have been drawn, which is statistically misleading. Because there were multiple items for all the other subgroupings, this is an apparent design flaw, possibly post-hoc. Also, many of the situations appear to deal contextually with very specific culture points, a probable source of major interference, as suggested by Bouton (1992). Only four of the 15 items deal with subject matter that are related to university life (1, 2, 5, and 9), the theme that will be stressed in the present study in order to maximize the informants' share cultural knowledge. Most deal with interpersonal relationships from the romantic in nature to lifelong friendships (3, 8, 10, 12, 15). Beliefs and background knowledge on these ideas varies greatly between cultures and individuals. What's more, I doubt the quality of many of Devine's designed implicatures. This is exacerbated by the fact that Devine does not report what she intends the implicata to be for her test items. For instance, item number 10 reads, "At a party John has been watching Bill's wife, a very pretty and friendly woman. John says to another friend, 'Bill's wife is probably cheating on him.' (Devine 1982: 205)." From what we are given to know of this context, John's utterance here clearly – to me – lacks the adequate supporting evidence required by Grice's Maxim of Quality, and is thus in violation thereof, but I can interpret no specific implicatum from it (nor does Devine report any). It appears to me that the literal statement is all that John means. I see it as likely not a Group C exploitation, then, but rather an uncooperative violation. Similar problems arise for me on several other items here. These types of difficulties – background

cultural interference and dialog design quality – will be designed out of the present study as well as possible.

When Devine interprets the Japanese informants' reports that high status interlocutors are not required or expected to be informative as a nullification of both Grice's Quantity maxim and CP, I take issue. Grice never detailed the exact measurements of informativeness required of every conversation and context. He does not say that there is only one way to be properly informative. He, in fact, specific to quantity of information, says that contributions should be "as informative as is required (for the current purposes of the talk exchange)" (Grice 1989: 26) – allowing that each talk exchange may differ and require different degrees of informativeness. If high status interlocutors in Japan are expected to speak little and underinform in Japanese conversations, then that behavior would be exactly that which is "acceptable" for the talk exchange in question. A deviation from that behavior would be marked and require the extra processing. The exact applications of each maxim are not strictured; they are subject to each conversational context.

Devine concludes by suggesting that investigations "which study the operation of implicature and which would control for such factors as the language/culture, age, and gender of the respondents and would focus on the cultural and situational constraints (for example, the significance of the information and the familiarity of the interlocutors) (Devine 1982: 203)" are called for in the future. Much of Taguchi's work (2002, 2005) addresses Devine's call for variable controls of age, gender, and language/culture of origin, and the present study addresses constraints of culture and situation, including interlocutors' interpersonal familiarity.

Lawrence Bouton was the first author to experimentally investigate implicature comprehension in L2. This work is published in 4 related pieces over a span of six years (1988,

1989, 1992, 1994). His methodology for testing implicature comprehension in NNSs is foundational, replicable, and sound.

In developing his first experiment of the above-listed set, Bouton sought to discover 1) if a specially designed instrument of multiple-choice questions could measure a person's ability to interpret implicatures (rather than use Devine's open-ended response study (1982)) and 2) the extent to which a person's cultural background affects comprehension accuracy of conversational implicatures (1988). He proceeded to develop his instrument upon the premises of two initial assumptions, which both did prove correct. The first was that "for any utterance involving implicature, there is one interpretation that will tend to be dominant (Bouton 1988: 184)" among the native speakers of that language. The second assumption was that it would be possible to provide enough contextual information about a dialogue's situation in a brief description to permit a NS to so interpret the intended implicature. He used 60 NSs and 79 NNSs in a pilot study of informants' elicited interpretations of 33 given utterances with contextual descriptions to create the answer bank for his test items. The NS interpretations (which were conclusively consistent) became the "right" answers while common variant NNS interpretations became distracters.

For example, we can follow one sample from the open-ended pilot study through to its existence as No. 7 on the multiple-choice experiment. The context for this item was described as Peter, a lifelong close friend of Bill, being seen out dancing several times with Bill's wife while Bill was away on business. Bill's response in this item is to say, " Peter knows how to be a really good friend, doesn't he? (Bouton 1988: 185)" In the pilot study's open-ended response results, 73% of NSs reported that Bill meant that Peter was not actually behaving like a good friend, and in the multiple-choice test this number increased to 86% of NSs agreeing. Because

this intepretation dominated NS responses, it was considered the expected, correct interpretation for American English speakers. However, only 32% of NNSs responded that way in the pilot study and 39% of NNSs chose that answer on the multiple-choice test. Distracter choices for this item on the multiple-choice test were selected from other common NNS pilot study answers. For instance, 47% of NNSs reported in the pilot study that they thought what Bill meant was that Peter can be trusted because he's such a good friend, so this interpretation was included as a distracter on the multiple-choice test and garnered 50% of the NNS selections. Although 0% of NSs responded this last way in the pilot study, when given it as an option on the multiple-choice test, 7% of NSs did select it (Bouton 1988).

When the final instrument was administered in 1986 to 436 newly arrived international students (with an average TOEFL score of 554) at the University of Illinois (as well as 28 NSs for a control), there was no time limit set for test completion. Overall, only 79% (reported orginally as 75% but later edited when 5 of the test items were proven unreliable and reanalyzed as control items (Bouton 1989)) of the NNSs' interpretations of these short dialogues were native-like. What's more, only five of the 33 items showed negligible performance differences between NSs and NNSs. This proved that NNSs do in fact have different pragmatic competencies from NSs and that coming from a non-American cultural background could serve as a proverbial obstacle to communication with American English NSs when conversational implicatures are used.

More specifically than just NS versus NNS comparisons, the NNS results were then broken down further according to place/culture/language of origination (German, Portuguese/Spanish, Japanese, Korean, Chinese, and Taiwanese). The Americans were statistically significantly different from each subgroup (not just the average of all of them). The

Germans scored highest of the NNSs on accuracy/native-likeness but were not significantly different from the second-place Spanish/Portuguese. The middle-scoring Taiwanese were not significantly different from any subgroup except the last-place Chinese. The Europeans were significantly more accurate/native-like than the Koreans, Japanese, and Chinese. More than the overall scores of each subgroup, there were revealing cultural obstacles to implicature comprehension accuracy embedded in particular items. For example, for the No. 7 item described above about Bill and Peter (where 86% of NSs agreed that Bill thought Peter was not acting like a good friend should), significant difference showed between the Spanish/Portuguese subgroup and the other subgroups. In agreement with the Americans were 70% of the Spanish/Portuguese, but only 43% of the Germans, 42% of the Taiwanese, and 33% of the Chinese. Where only 7% of the Americans indicated that Peter was a good friend and so could be trusted, only 13% of the Spanish/Portuguese agreed, indicating that they "have the same suspicions as the American NSs do (Bouton 1988: 195)," but a whopping 54% of the Germans, 50% of the Taiwanese, and 53% of the Chinese did in fact think Bill trusted Peter with his wife, indicating different cultural assumptions of such relationships.

Results for the above-described experiment were consistent at 5-month and 12-month replication periods, showing insignificant improvement over these time periods spent in country (1992).

Four and a half years after conducting the initial experiment, Bouton (1992) readministered the same test battery to thirty of the same original informants in order to gauge improvement in implicature comprehension over a long immersion period. These speakers did show significant improvement on the native-likeness of their implicature interpretations, adding fifteen more test items to the original five (out of 33 possible) on which NNS performance was

essentially the same as that of NSs. Bouton also concluded that the only test items still patently misunderstood were idiosyncratic, because knowledge of specific American culture points (like attitudes on marriage and friendship) was interfering, rather than actual language use (such as implicature type groupings, Maxim of Relevance floutings, etc.). None of the implicature test results correlated significantly with other types of language proficiency, as determined through comparison to the results from a battery of general proficiency tests also administered to the same informants.

Bouton (1994) describes how a modified implicature comprehension test, this one with 25 items, was readministered after 17 months to 34 of 304 different original informants (not the informants from the 1988 and 1992 pieces) in order to test change in accuracy over a time span between the 12 months and 4.5 years already tested. Improvements over this time frame were statistically significant but did not approach native-likeness. More specifically, certain implicature types (like Relevance Maxim floutings and scalar implicatures), as cast by Bouton, showed improvement at this time frame while other types (like indirect criticism, irony, and sequences) did not. These results are complementary to the previous findings (1988, 1992), showing an overall steady progression over time in pragmatic comprehension. They suggest, at minimum, that accuracy of NNS implicature interpretation does improve over an extended period of immersion, sometime between 12 and 17 months, and, after several years, it can approach native-likeness (1994).

Taguchi (2002) used a 24-dialogue implicature comprehension instrument modified from Bouton (1992, 1994) and Holtgreaves (1999) and the introspective verbal reporting method to identify and compare the cognitive strategies used by NNSs to interpret L2 implicatures. Eight female Japanese NS informants studying abroad in an ESL environment, four from a lower

proficiency level and four from a higher proficiency level, listened to 24 English language dialogues and after each one, they answered multiple-choice questions designed to gauge their ability to interpret implicature meanings like native speakers and then orally discussed their reasons for doing so.

Taguchi (2002) found, from the implicature interpretations and discussion of these Japanese NSs in an American study-abroad context, that significant difference does occur in the accuracy of implicature interpretation between higher and lower proficiency listeners. This difference disappears, though, when accuracy of guessed interpretations is considered, indicating that it is confidence in interpretation that increases, not actual accuracy thereof, as proficiency level increases. Also, results indicate that the particular cognitive inferential processing strategies of lower proficiency ESL learners may be characterized as different from those of higher proficiency learners, the former relying on keywords and background knowledge/experience, the latter on recognition of various speaker intentions. This last finding is critical to the work at hand, suggesting that only over time do NNSs interpret utterances according to Grice's framework.

Taguchi (2002) identified, through the experimental method of introspective verbal reporting, six different cognitive strategies (paralinguistic cues, the adjacency pair rule, background knowledge and experience, key word inferencing, logical reasoning, and speaker intention) used by NNSs to interpret context-dependent L2 implicature meaning in three different categories (indirect opinions, indirect request refusals, and indirect information disclosures). Incidence of strategy use occurred 117 times, with informants of both proficiency levels showing multiple strategy use (using one strategy to inform another during interpretation) at times. Infrequent strategy use was identified for request refusals compared to opinions and disclosures

(17 incidences compared to 45 and 53 incidences, respectively) due to their greater

conventionality of illocutionary force (the framework for indirectly refusing a request has fewer

possible manifestations than do indirectly issuing opinions or disclosures). Higher proficiency

informants reported the identification of various speaker intentions more frequently than lower

proficiency informants. This result reflects the fact that listeners must be able to simultaneously

understand both the meaning and purpose of an implicature in order to successfully interpret it.

What is interesting to me, here, is that these informants demonstrated, yes, an awareness of

several implicit pragmatic principles but did not volunteer any strategies that indicated direct

reliance on Gricean maxims, or at least that were interpreted by the researcher in Gricean terms.

Taguchi (2005) investigated several facets of NNS implicature comprehension: how

accuracy and speed relate to each other, how L2 proficiency affects accuracy and speed, and how

different types of implied meaning affect accuracy and speed. Whereas previous literature

addressed comprehension accuracy alone, this study includes another dimension of L2 pragmatic

performance by addressing comprehension speed, a reflection of fluency, examined here not only

as it relates to accuracy and L2 proficiency but also to different types of implied meaning. These

types were implicatures with low versus high comprehension loads, or, in other words,

implicatures that require less cognitive processing effort versus implicatures that require more.

Some conversational implicatures occur within predictable, formulaic patterns of discourse. This

familiarity or frequent occurrence theoretically decreases the comprehension load, making them

easier to process and thus faster to be understood, while some implicatures are more

idiosyncratic, increasing the comprehension load by requiring that a greater quantity of

contextual signals be processed before understanding can occur. The author uses the terms

"more and less conventionalized" (Taguchi 2005: 545) to label her two targets, but I will refrain

from doing so in order to avoid confusion with the different Gricean definition of conventionality; I will refer to her targets as low and high comprehension load.

This study used 206 informants composing two groups, one being 46 NSs of American English and the other 160 Japanese NNSs thereof. The NSs were university students in the southwestern United States and the NNSs were students at a college in Japan whose language of instruction was English but who did not have extensive experience living in English-speaking countries. TOEFL scores were used to determine L2 proficiency. The multiple-choice research tool created here consisted of 40 dialogues and corresponding questions, with two items for practice, six fillers, and 16 items each for the two different implicature targets. A sample low comprehension load implicature used in this tool is the response, "I have to finish my paper by eight in the morning" to the request "Let's go to the movies" (Taguchi 2005: 549), whereas a sample high comprehension load implicature used here is the response "We're always visiting each other" to the question "Do you like the people upstairs?" (Taguchi 2005: 549). Generally, the low comprehension load items were formulaic indirect request refusals and the high comprehension load items were indirect opinion statements. To better mirror real life language use, Taguchi used audio dialogues rather than written ones. Her computerized tool measured the lag in response time between appearance of the written question on screen and informants' key pressing of their selected answer. The dialogues were rated by a second expert, the distracters created for the tool's answer options were written systematically according to three principles, and the tool was administered to a pilot study of 58 participants before revision and, ultimately, final data collection.

Results showed that, as expected, NSs responded accurately, quickly, and consistently to all the target items, while NNSs, relatively, responded inaccurately, slowly, and inconsistently.

(NS M 37.42/38 items SD 0.69 and M 9.54 seconds SD 2.18, NNS M 25.54 items SD 6.52 and M 19.97 seconds SD 6.01). The NNS results showed significant difference in both accuracy and speed between the low and high comprehension load items, with the less formulaic implicatures showing more processing time to interpret and less accuracy in comprehension than the more formulaic implicatures, which proved here to be easier and faster, as predicted. L2 proficiency seemed to have a moderate effect on comprehension accuracy although not on comprehension speed. As this result was not entirely expected, the author explained it as a likely consequence of two possibilities: 1) the higher proficiency NNS group was only high-intermediate, not advanced (TOEFL score mean of 457 rather than over 600); their experience with the language simply may not yet have been sufficient to yield automatized control of the process and be faster, as the NSs were, and/or 2) pragmatic comprehension speed may be heavily influenced by many other nonlanguage and sociopragmatic variables, like focus ability or cultural knowledge. Lastly, controlling for TOEFL scores, no relationship was found between comprehension speed and accuracy, suggesting that the two do not develop in parallel in L2 pragmatic acquisition and should be analyzed separately in future research as distinct dimensions of competence. An interesting post-hoc analysis showed that any incorrect answers chosen were overwhelmingly from the distracter options based on short-term memory/vocabulary taken from the end of the dialogue. This was explained by the audio nature of the task; informants had no written text to which to refer if they didn't know the implied meaning immediately and were thus likely to choose an option that was simply reminiscent of the last thing they heard in the dialogue.

The implications Taguchi sees in this piece (2005) are reminiscent of Bouton's instructional suggestions (1990). Language teachers should address implied meaning in the classroom and devise curricula that acknowledge differential processing loads. The formulaic

discourse patterns of utterances with low processing load implicatures can be taught and practiced in the classroom explicitly, while the successful comprehension of idiosyncratic higher processing load implicatures could be addressed by promoting awareness in students of indirect communication and teaching skills like contextual feature analysis, from paralinguistic cues like intonation or pausing to necessary background knowledge. Also, teachers should treat language knowledge and fluency (of which comprehension accuracy and speed are reflections) as separate curricular goals and not assume that fluency automatically comes with the knowledge they teach. This study adds to the body of experimental literature on L2 pragmatic competence, especially by considering the dimensions of speed and differential processing loads, and has notable influence on the instrumentation methods used in the present piece, specifically in the writing, selection, and revision of dialogues and multiple-choice item distracters.

Because Taguchi's other work on implicature comprehension (2001, 2007, 2008a, b, c, d, 2009) does not deal with processing strategies, it is not as vital to the study at hand. It will thus be summarized here, with highlights of the most relevant information. These Taguchi studies are most important to the general body of implicature literature in their continued operationalizing of the research task of measuring pragmatic comprehension. Her tests were computerized mechanisms of listening and response that measured accuracy, yes, but also processing speed.

Taguchi (2007) also performed an L2 implicature comprehension study, looking not just at comprehension accuracy but also at comprehension speed and lexical access speed. The inclusion of these variables draw in the theoretical claims of the school of cognitive psychology which say that processing speed reflects level of skill acquisition – that fluency is characterized by much knowledge as well as automatic control of this knowledge's use in processing or production. Accuracy improved much more so than speed here and accuracy correlated with

general proficiency, but speed was not found to relate to accuracy, suggesting a non-parallel developmental track for the two variables. The participants showed a significant correlation between lexical access speed and response speed of pragmatic comprehension, as well as between general language proficiency level and accuracy of pragmatic comprehension. Lexical access speed showed no relationship to accuracy, nor did proficiency level bear a relationship to comprehension speed. These contradictory underlying variable relationships suggest a complex and as yet undetermined cognitive process in fast, accurate L2 implicature comprehension. Taguchi (2008) showed that processing speed of implicature inferencing and lexical access improved over time during a Japanese NS study abroad experience in America, but not accuracy of implicature interpretation.

Taguchi (2007) used a 24-item computerized listening instrument in pre-test and post-test format, administered to Japanese NSs learning English as a foreign language (EFL) before and after a 7-week period. In this study, she not only considered accuracy of comprehension, using the raw scores on the comprehension test, and general proficiency, using TOEFL scores, but she also introduced the variable of speed of comprehension, as measured by response time to the computerized implicature comprehension test items, and lexical access speed, as measured by response time to a computerized vocabulary identification task. The 92 Japanese EFL student participants showed a mixture of relationships between the four variables, necessitating further research.

Taguchi (2008) studied 44 Japanese ESL learners' pragmatic comprehension change over time in an intensive 14-week English language study program in the United States. The computerized listening tool for implied meaning comprehension in this study had 60 items of short dialogues containing indirect request refusals or indirect opinions. The lexical access test

had 80 items of living or non-living nouns to gauge semantic classification speed. The Language

Contact Profile of Segalowitz and Freed (2004) was modified and administered at weeks 1, 8,

and 19 in order to gauge the amount and nature of language contact outside class and thus

opportunities for pragmatic practice and acquisition.

Taguchi (2001, 2007, 2008a, b, c, d, 2009) used computerized listening tools to test

pragmatic comprehension accuracy and speed and their improvement over time for NNSs. She

studied their relationships to variables such as general proficiency, lexical access speed, and

working memory. She tested a variety of time frames for improvement such as 1, 7, 8, and 19

weeks. She studied Japanese students in both American study abroad contexts and studying

English in class and also American students studying Japanese in class. Results generally

showed the complexity of pragmatic comprehension processing.

2.5 - Classroom instruction on implicature use/inferencing

Bouton also applied experimental results of naturalistic acquisition of implicature use,

such as the studies listed above, toward his proposal of classroom teaching practices (1990). In

this piece, Bouton exhorts the need for English language teachers to start addressing implicature

skills as a curricular topic in the NNS classroom and for instructional materials explicitly focused

on implicature use to be created or included in texts. He provides four dialogue samples from

different ESL textbooks that contain implicatures but do not highlight or explain them as his

evidence for there being a complete paucity of implicature skills instruction for NNSs,

suggesting that textbook authors and teachers assume that NNSs can and will understand any and

all implicatures without effort. Because this assumption is risky, if not utterly false, he proffers

some possible instructional techniques to help address the issue. The first is to teach that

utterances which contain generalized Gricean implicatures (like "Are you kidding me?") can be

interpreted in English somewhat formulaically according to the implicature rather than the literal semantic meaning. He also suggests that teachers explicitly teach their students about the existence of implicature and the skill of identifying conversational clues to help in the recognition thereof, as well as how to ask NSs for a paraphrase when they think an utterance may contain one. Lastly, he suggests the instructional activity of comparing different contexts' effects on the same utterance possibly having different implicatures (like "Is that seat taken?" in a theater from someone looking for a seat or an employee counting attendance) (Bouton 1990).

2.6 - *Directions lacking in previous literature*

All of this leaves room for investigation in several directions. One necessary turn would be to experimentally test the linguistic validity of Grice's proposed philosophical theory, which is clearly a tall order. Assuming that Grice's definition of implicature is correct, one could narrow down the research focus to the point of testing the validity of Grice's proposed calculability assumption as a processing model for implicature interpretation. Because this calculabilty premise assumes that hearers intuitively understand the four maxims and CP, a study which explores whether listeners do in fact interpret implicatures by processing Grice's maxims, or if, in fact, they are even so capable, could do much to add scientific substantiation to whether or not Grice's theory of implicature is a valid linguistic model. If listeners show no evidence that they do use the four maxims to calculate implicata, and if they cannot interpret them when so prompted, then discredit will be done to Grice's philosophical theory as a valid linguistic model.

This experimentation could also benefit from a more defined vision regarding a chosen model assumed in investigation. Here, the Gricean framework will be the target. Another turn would be to determine the cognitive inferencing strategies of NSs of English in English, rewinding one step from the work of Taguchi (2002) for a crucial comparison, or of NNSs in

languages other than English, helping to fill the common void for SLA experimental work not centered on ESL learners and broaden our perspective for a better picture of this phenomenon in language in general. The former but not the latter will occur in this work.

CHAPTER 3

PROCEDURE

This study was approved by the Institutional Review Board (IRB) of the University of

Georgia (UGA) in October 2008 and renewed in October 2009.

3.1 - Informants

Informants were recruited through IRB-approved announcement (see Appendix A) to the

Department of Geography and the Office of International Education at UGA and in Dr. Don

McCreary's UGA classes. For the pretest session, four NNSs and four NSs participated. For the

final experiment, nineteen NNSs and nineteen NSs participated and were scored as informants.

NNSs were numbered randomly during analysis as 1-19, and NSs were labeled 21-39. All

participants were UGA students or scholars, ensuring both NNS general English proficiency

through university-wide TOEFL minimum score standards and one shared cultural context (that

of UGA) for all informants. Interested NNS participants were pre-screened for length of time in

country and previous exposure levels to English before participating as informants, or their

results were excluded if post-screened for the same variables. All participants were post-

screened for prior knowledge of Gricean pragmatics and/or higher level linguistics. This was

determined either through direct LCP responses that indicate previous study by an informant of

Grice, pragmatics, implicature, or related non-introductory linguistics courses – where

participants were automatically and immediately excluded as scored informants – or, in few

cases, much later, during CT results analysis – where given responses implied such previous

study. Table 3.1 records two such responses, demonstrating here previous knowledge of Grice's

specific maxims and general pragmatics. Please note, for amusement's sake, that Excluded

Participant 1 did not betray previous Gricean study until the very last open-ended response of the

entire CT (despite many opportunities to so reveal throughout participation, including on the

LCP at the very beginning, as intended), thus disillusioning this author (with much laughter) of

the amazing possibility that one single participant could provide a set of "perfect" results actually

containing every hoped-for response.

Table 3.1: Sample Reports Revealing Non-Naivete Resulting in Participant Exclusion

Excluded Participant	Segment	Question	Response (*sic, except for author's emboldenments*)
1	5	3b	The original reply was perfect in **quality, relevance,** and **quantity**.
2	2	6	*E Other:* literally is not true but **pragmatically** is true

3.2 - Procedures

Six group sessions were conducted on the UGA campus in July, August, and September

2010. July's session was a pretest, after which final edits to the instrument were made for the

five experimental sessions in August and September. Refreshments like pizza and soda were

provided during out-of-class sessions; otherwise, there were no direct benefits. Informants took

25-75 minutes to complete their participation, which included reading, filling out where

necessary, and returning where applicable the following three documents: the Informational

Letter of Consent, the Language Contact Profile background questionnaire, and the

Comprehension Test experimental instrument (see Appendices 2, 3, and 4).

3.3 - Instrument Design

The inspiration for the design of this study is an amalgamation of previously published pieces by three authors investigating L2 implicature comprehension: Devine (1982), Bouton (1988, 1989), and Taguchi (2002). The salient features thereof for this study are Devine's focus on Gricean maxims and PCI categories, Bouton's use of multiple choice questionnaires to gauge comprehension accuracy, and Taguchi's focus on cognitive processing strategies and use of introspective reporting. The design of the instrument in question, or Comprehension Test (CT) (see Appendix D), is described below, highlighting the relevant authors as necessary.

The CT consisted of one practice dialogue segment, five experimental dialogue segments, and one experimental addendum. Their design is elaborated below.

3.3a - Addendum

The Addendum (see Appendix D: 100) consists of five Likert scale questions which attempt, as part of the fifth research question, to gauge the informants' preferences or opinions of implicature use frequency in daily spoken interactions. Ranging from "Very Easy" to "Very Difficult" or "Very Infrequently" to "Very Frequently" on a scale of 1-5, these questions hope to compare informants' awareness of PCI use frequency in their native languages (whether English or not) and their preferences for use or disuse thereof personally (whether in English or not). This will thus address the sixth research question. This addendum is of original design and is hoped to help address the question of the universality of implicature, especially in Gricean terms, as begun by Keenan (1976) and Devine (1982). Both Keenan (1976) and Devine (1982) suggested that Grice's theory was inadequate for understanding non-English implicature use according to non-English language NSs, but neither compared learners' opinions of their L2s

with their NLs. So, this addendum also is hoped to proceed one step further in explicitly

comparing individual informants' use frequencies of PCIs in their own NLs and others.

3.3b - Dialogues

Each dialogue segment consists of a contrived conversational exchange in which two

speakers contribute one turn each. The response to Speaker 1 (S1) by Speaker 2 (S2) either

carries or does not carry a PCI. Each dialogue is preceded by a description of the requisite

contextual premise. The format of this type of context description and short exchange is found

in all the major experimental works which inform this piece: Devine (1982), Bouton (1988,

1989), and Taguchi (2002).

Like Taguchi (2002), the instrument at hand provides a practice dialogue segment for

informants to familiarize themselves with the research method before experimental items are

introduced. The dialogue in this practice segment is designed to carry a "softball" PCI, as it is

only a low-processing load PCI in the terms of Taguchi (2005). As an indirect request refusal,

by way of offering an alternate obligation in conflict with the speaker's ability to comply with

the request, it is of a commonly occuring/frequently used framework in English and requires

little contextual cue processing when familiar with the framework. In Gricean terms, it is a PCI

of the Group A category, where the speaker only seems to infringe the maxim of Relation

apparently, although not in any real violating sense. All NSs as well as proficient NNSs should

accurately comprehend the implicatum easily, as suggested by Taguchi (2005). Because this

implicature is formulaic in nature, results from the practice segment are expected to show high

comprehension accuracy, but it will not be scored.

For the five experimental dialogue segments, all contexts and exchanges were contrived

in order to address certain methodological needs. First, the dialogues needed to be limited only

to situations appropriate to UGA academic culture. The embedded intent here is to maximally prohibit interference from mismatches of shared background knowledge between that which is required to understand the dialogues and that possessed by the informants. Because all informants were UGA students or similar, they can be expected to share at least and maybe only this one stated premise. The dialogues also were designed to be free of social variable differences, as all dialogues are constructed to occur or to be assumed to occur between social peers. Carefully, no mention is made to speaker genders throughout the instrument, and it is even explicitly stated that all speakers are student friends (see Appendix D), negating power hierarchy effects. The embedded intent here is, similarly, to maximally prohibit interference from mismatches of worldviews between that encoded in the dialogues and that possessed by the informants. This problem of culture point interference was expressed, for example, by Bouton (1992) as informants' culturally variable attitudes on relationships, and Bouton (1988) shows that cultural background significantly affects implicature comprehension accuracy.

One segment (the last, Segment 5) was designed for full literal cooperation, and four segments (Segments 1-4) were designed to target one each of Grice's maxims through flouted exploitation. Grice would call these exploitations Group C PCIs (Grice 1989), and Taguchi (2005) would call them high-processing-load implicatures. By their nature, they are not formulaicly used and require specific processing for accurate interpretation. Thus, they are the best choice for investigating implicature processing or comprehension strategies, especially when the goal is to assess a proposed theory's applicability as a legitimate linguistic model, as it is here for that of Grice.

To make clear identification, Segment 1 carries an exploitation of the Maxim of Relation, and is adapted from what Bouton (1989) calls his "Pope Q" implicature type − where a response

given to a yes/no question is another yes/no question essentially unrelated to the first and whose obvious answer must be the same answer as that of the first prompting question.

Segment 1 – S2: *Does the sun rise in the east?*

>> I obviously, invariably, unendingly, and/or absolutely like math.

The implicatum here contains a very emphatic yes, maybe even going so far as to suggest that S2 has always and will forever like math and/or that everyone everywhere does or should know so. The literal/explicit meaning here concerning where the sun rises is actually all irrelevant and so is not part of the implicatum.

Segment 2 carries an exploitation of the Maxim of Quality, as S2's reply is sarcastic.

Segment 2 – S2: *Oh, no way! It was absolutely the worst. You'll just hate it!*

>> Yes, you obviously should take it. I am annoyed with, in disbelief of, or teasing you for continually asking. Stop.

The implicatum here contains some emotional content like disbelief, annoyance, or teasing and/or a request or suggestion for S1 to stop asking the same question, all on top of a yes recommendation. The literal/explicit meaning here of a very negative recommendation is all untrue and so is not part of the implicatum.

Segment 3 carries an exploitation of the Maxim of Quantity, as S2's reply is highly over-informative and therein implicative.

Segment 3 – S2: *My schedule? Well, hmm, let's see… … … Okay?*

>> I don't want to discuss registration with you right now/ I need you to leave me alone. I am stressed.

The implicatum here contains some emotional content like upset, stress, or annoyance and a request or suggestion against interacting/talking with S1. That S2 is very busy right now, has not

yet registered, and will actually not be able to discuss schedules for quite some time yet to come are all facts that belong to the explicit/literal content of this utterance, not the implicatum. The brush-off and admission of stress are the implicated concepts. If they are close friends and not just acquaintances, which is unknown but possible here, perhaps the implicatum also contains a request for help.

Segment 4 carries an exploitation of the Maxim of Manner, as S2's reply is not perspicuously worded.

Segment 4 – S2: *The other individual persons who committed to attend the session of examination review ultimately proved absent.*

>> I am disappointed; it went poorly.

The implicatum here contains an admission of some type of emotional discomfort like hurt feelings, embarassment, disappointment, or anger and/or a negative opinion of how the session went. The fact that S2 was stood up is explicitly/literally stated (although not perspicuously so), and is not actually a part of the implicatum. It is S2's choice to flout Manner here that communicates, through exploitation, the above unuttered/nonliteral meaning.

The above contrivances may not sound like completely naturalistic conversation, but they comply with all experimental goals. Now to the question items for the dialogue segments:

3.3c – Questions in Dialogue Segments

All ten dialogue segment questions are aimed at evaluating participants' comprehension of the dialogues, focusing on the intended implicata, and their cognitive processing strategies. They target Grice's maxims and CP as the possible processing framework. Questions 2a through 3b are open-ended, as seen in Devine (1982) and Taguchi (2002). Questions 1 and 4 through 10

are all discrete answer items in the form of multiple choice, Bouton's prefered technique (1988, 1989).

The first question (Did you understand the conversation?) is adapted from Taguchi (2002) where she allowed her informants to admit uncertainty. By then asking them for their best guess at comprehending the implicatures, their comprehension accuracy improved significantly (was near-native-like). Since I am interested not in my informants' confidence level in their comprehension accuracy (I do not need them to be certain of their interpretations) but rather in the manner in which they process the meanings they interpret, I have included such an opportunity. Also, allowing informants to admit that they truly do not understand the dialogue may both prompt them to ask the researcher questions to aid them about vocabulary or syntax and also provide a concrete explanation of possible outlier results.

Although not an explicit part of this thesis's original research agenda, the first truth that must be ascertained in this study is the informants' comprehension accuracy (against which the research agenda is weighed), as stated in the seventh research question. Question 2a (If you had to explain to a friend what Speaker 2 means in this conversation, what would you say?) is designed to elicit the informants' interpretation of the implicatum in each dialogue. Its goal is the same as that of the instrument used by Devine (1982), but its phrasing is indirect, so as to prompt the most naturalistic response possible and avoid Devine's assumption that a paraphrase would certainly contain the implied meaning (explain?). To encourage non-literal explanations, the informant is instructed to explain S2's meaning to a friend. Questions 4 and 5 (What do you think was the intended meaning of Speaker 1's question? – and – What do you think was the intended meaning of Speaker 2's reply?) also aim to discern the informants' comprehension accuracy, as a backup from Question 2a for statistical accuracy. As Bouton (1989) says, in

reference to the open-ended free responses of Devine's instrument (1982), evaluation of an item like my 2a may prove difficult, so the reliability of these two forced-answer questions will serve as assurance. Previous studies have not included comprehension checks of the non-target portions of their dialogues, but I have included such, in Question 4, as a possible explanation for miscomprehension of the PCIs. Having comprehension checks of both S1 and S2 also highlights the difference between literal and implied meanings in these dialogues.

The shoring up of questions 2a and 5 by question 1 is drawn from Taguchi (2002) who allowed informants to admit uncertainty but then guess the implicatum, increasing their accuracy scores significantly. The shoring up of questions 2a and 5 by question 4 is an original design of mine intended to strengthen the quality of the analysis. If an informant misunderstands the implicature because he/she misunderstood its discursive prompt, the corresponding results should not be considered in the target group. The study is designed to assess comprehension accuracy and strategies of informants who do, indeed, have the opportunity to catch the implicature by having understood its discursive prompt.

To address the first original research question of this thesis, Taguchi's use of introspective verbal reporting to identify cognitive processing strategies for L2 implicature comprehension (2002) is here adapted as introspective written reporting for experimental practicability. The following questions are from the CT in question:

"**2b)** Why do you think this is so? What are you thinking about when you explain it this way?...
3b) Why do you think this? What are you thinking about when you recommend this?" (see Appendix D)

These questions closely mimic Taguchi's verbal questions of "'Why did you choose the answer?... What were you thinking when you chose the answer?'" (Taguchi 2002:158).

Question 3a (If you could recommend a way for Speaker 2 to respond to Speaker 1 here, what would you say?) targets Grice's notion of Cooperation, or the third research question. Informants are expected to provide literally cooperative alternatives here to the implicature-carrying dialogue utterances or to approve of those given, accompanied by coordinating explanations in 3b. They are not expected to provide other implicatures.

Questions 6 through 9each target a particular Gricean maxim. Although Question 2b is an introspective, open-ended question where informants can report, in naïve wording, Gricean maxim processing as a comprehension strategy, these four forced-answer discrete items serve a different shade of purpose. This is a backup for the first research question and an expansion thereof into the second. "To what degree do informants report Gricean maxim applications as comprehension strategies for implicature interpretation?" becomes "To what degree can informants naively identify Gricean maxim floutings?" I will be looking primarily for correct answers to each item. They are listed below.

6) Given the question by Speaker 1, Speaker 2's reply:
      A) is true.
      B) is not true.
      C) could be true.
      D) I don't know/I'm not sure.
      E) Other: _____
7) Given the question by Speaker 1, the amount of information given in Speaker 2's reply is:
      A) too little.
      B) appropriate.
      C) too much.
      D) I don't know/I'm not sure.
      E) Other: _____
8) Given the question by Speaker 1, the information given in Speaker 2's reply is:
      A) relevant.
      B) irrelevant.
      C) I don't know/I'm not sure.
      D) Other: _____
9) Given the question by Speaker 1, Speaker 2's reply is:
      A) stated in clear, simple wording.
      B) not stated in clear, simple wording.

C) I don't know/I'm not sure.
D) Other: _____

Question 10, finally, serves only in purpose to distinguish between informants'

comprehension accuracy and opinion of the speech items' overall efficacy (addressing the fifth

research question of "To what degree do informants prefer speech free from or containing this

phenomenon?"). In this, it is predicted to distinguish the literally cooperative and PCI-carrying

segments, where informants will admit possible confusion for PCI-carrying segments 1-4 but not

Segment 5. Ostensibly, even informants who clearly understand the PCIs will admit that such

can cause confusion. It is listed below.

10) Given the question by Speaker 1, Speaker 2's reply:
    A) is easy to understand.
    B) could cause confusion in the conversation.
    C) I don't know/I'm not sure.
    D) Other: _____

CHAPTER 4

RESULTS AND ANALYSIS

This chapter provides results from the CT and analysis thereof as divided according to the

proposed research questions of the study. They are as follows: PCI comprehension accuracy

(section 4.1), Grice's maxims as interpretation strategies (section 4.2), the CP as a guiding

framework (section 4.3), the overall operationality of Grice's theory (section 4.4), and informant

preferences for literally cooperative speech (section 4.5). Answers to the sixth research question

of how NNSs and NSs as well as L1 and L2 compare are embedded throughout the chapter.

4.1 – Research Question 7: Comprehension Accuracy

Although it is the seventh (and final) proposed research question of this study due to its

having been well addressed before (See Devine (1982), Bouton (1988, 1989, 1992, 1994), and

Taguchi (2002, 2005, 2007, 2008a-d) and not being original to this author, Chapter 4 will begin

with the analysis of implicature comprehension accuracy found in this study because it is

fundamental – a basic building block – to the rest of the study. So: To what degree do NNSs

accurately comprehend NS implicatures?

In answering this question, this thesis improves on the Devine and Taguchi pieces above

by including NS as well as NNS comprehension accuracy in the results. It also expands on the

Bouton and Taguchi pieces above (not including Taguchi 2002) by including open-ended/free

response interpretation sections, like those of Devine (1982) and Taguchi (2002), as well as the

standard multiple choice, providing informants multiple avenues to showcase their

comprehension accuracy and abilities. Following below are results tables recording informants'

responses to the dialogue segment questions – both open-ended responses and multiple choice – which address accuracy in interpreting this CT's intended implicata. They are accompanied by prose summaries and analysis thereof.

First, Table 4.1 shows how many informants selected the correct answer in multiple choice Question 5 to indentify the intended implicata of Segments 1-4. Unsuprisingly, almost all the NSs correctly identified the implicata here (17, 16, 18, and 19 for Segments 1-4 respectively). If they had not, the usability of the dialogues contrived for this tool would have befallen great suspicion. In this multiple choice format, the NNSs also achieved their greatest accuracy ratings, with 10-15 informants correctly recognizing each implicatum. Segments 2 and 3, the Quality and Quantity exploitations, gave them the most trouble. Of the eight NNSs who didn't correctly comprehend Segment 2's implicature, three admitted in Question 1 that they weren't certain that they understood the dialogue from the beginning. Six of them selected the answer option containing the literal (but opposite from the intended) meaning of S2's reply (in 'a: It was terrible; it's not recommended.'). Three even reported that S2 had clearly changed opinions of the class, revealing their awareness of the correct context. These results may suggest that sarcasm is particularly confusing to NNSs. The situation is similar in Segment 3 for overinformativeness.

Table 4.1: Accurate Identifications in Question 5 of the Intended Implicata

	Segment 1	Segment 2	Segment 3	Segment 4
NNSs (n/19)	13	11	10	15
NSs (n/19)	17	16	18	19

Multiple choice can only take one's understanding of comprehension accuracy so far, though, because item recognition from a list isboth much easier than reporting one's own interpretation and also fakeable or guessable (and thus less valuable in evaluation). So, Table 4.2

below records all reports made in this study in which informants showed that they understood the implicata accurately and fully.

Knowing, from previous discussion in Chapter 3 and Tables 3.2-3.5, what the differences are between the implicit versus explicit meanings of S2's replies in this CT, the evaluation criteria for implicature comprehension accuracy here can easily be refined to search only for implicit, not explicit, content. As such, target words or phrasing for which Segment 1 responses were searched include "obviously, naturally, forever, absolutely, of course, very much, invariably…" alongside just "yes" but not anything about sunrises. Targets for Segment 2 include things like "stop asking, I won't tell you again, you should obviously take it, annoyance, teasing…" on top of just "yes" but no negative recommendations. Targets for Segment 3 include "stressed, can't talk, go away…" but not just " busy, haven't registered yet…". Targets for Segment 4 include "disappointed, upset, session was bad…" but not just "no one showed."

Many informants in this study did not report any of the appropriate emotional, judgmental, or emphatic content carried in the intended implicata. For instance, the intended implicatum in the Segment 1 dialogue is not only a plain yes, as nine NNSs identified, it is an emphatic yes, as only the three NNSs recorded in Table 4.2 reported. Likewise, nine NNSs identified a positive recommendation in Segment 2, but only the one NNS (Informant 10) recorded in Table 4.2 explicitly identified the implied emotional/judgmental content of annoyance/frustration or teasing/joking. Although many more reports were made that indicated accurate partial comprehension of the implicata (and these informants very well may have fully understood, but the data cannot show this), this study's design focuses only on the full reports. This is done not only for rigor's sake, as the method of introspective reporting is known to be limited and should not be overextended, but also in an effort to improve upon the evaluation

mishaps of Devine (1982), where seemingly every free response, or at least too many responses of too widely varying content, was/were scored as correct.

The highlights from this table are that only zero to three NNSs reported the correct full implicatum in each segment. Given all the acknowledged limitations of the CT and method used here, this still tellingly shows very little to truly no implicature comprehension on the part of NNSs. When compared to their 10-15 correct answers to Question 5 (see Table 4.1 above), the difference is stark. When compared, say, to the numbers Bouton (1988, 1989) reported for comprehension accuracy (many percentages in the high 70s), the difference is shocking.

This could be an important finding, suggesting that reliance on multiple choice questionnaires alone to gauge accuracy is faulty at best, if not downright unacceptable. Although Bouton (1988, 1989) adamantly defends the multiple choice format as a viable tool for testing and research in this field, especially when compared to the open-ended free responses used by Devine (1982), the discrepancies found here between the two methods suggest that either he is wrong or there must be some other, as yet unfound or at least unpublished, middle ground.

However, when one also notes from this table that only two to five NSs per segment reported the full implicatum, one sees the problem more broadly: that relying on reports alone to gauge comprehension accuracy is also inadequate., especially since the elicitation method used here is improved from Devine's. I believe further improvement can be made to the elicitation format, though, with the addition to Question 2a of a statement encouraging thoroughness somehow. Also, reanalysis of the present data may be in order so as to consider whether responses to Question 3a, stated in explicit terms, that include previously described emotional/judgmental content missing from reports in 2a should be counted as correct answers as

Table 4.2: Reports in Question 2 of Full, Accurate Comprehensions of the Intended Implicata

	Informant	Question	Response (*sic, except for author's emboldenments*)
Segment 1 — NNSs (3/19)	1	2a	It seems that the speaker likes the subject **a lot**. The sun do did and will **forever** rise in the west. The speaker wants to adapt this nature to his likeness to math.
	4	2b	Bc he/she gives unrelated sentence with a certain answer as **common sense**. So he/she treats 'he/she likes math' is **natural** as the sun rises in the east.
	8	2b	Using metapher let's his statement of saying **'yes'** appear **stronger** even if it might confuse somebody who doesn't know this person and would have expected a clear and simple answewr. In the wrong tone the response of S2 could sound offending or enoyed, but it could also sound funny to break the ice.
Segment 1 — NSs (3/19)	27	2a	They meant "**of course**," they like math.
	31	2a, 2b	S2 **clearly** likes math./ His response is made in jest. He acts like the question was silly – **obviously** he likes math just as it is obvious that the sun rises in the east.
	33	2b	Asking a common knowledge question implies a positive, **obvious** answer.
Segment 2	10	2a	I'm telling you for the **last time**, take his class.
	33	2b	S2 is sarcastic and **annoyed** that S1 **continues** to ask an obvious yes question.
	34	2a	**Stop** asking me. You should take the class.
Segment 3 — NSs (3/19)	21	2a	S2 is a bit **overwhelmed** at the moment and **does not want to take time** to compare schedules. She needs to worry about the current semester, not the next one…
	34	2a	I **don't have time** to discuss my schedule with you because I'm **preoccupied.**
	36	2a, 2b	**Stop bothering** me./ S2 is saying that he/she has **a lot to do** rather than sit down and talk with S1 about their schedules.
Segment 4 — NNSs (2/19)	6	2a, 2b	The group study **didn't go very well** because his/her partner is absent for this study… S2 indicate that the other people didn't show up last night, so it might **not** be **a good experience** for him/her of study grouply
	8	2a	S2 was **mad** at the people who didn't show up for the session he prepared with lots of effort.
Segment 4 — NSs (5/19)	22	2a	S2 is **upset** because no one came to the review session they planned.
	33	2a	It went **poorly** because no one was there.
	36	2a	No one showed up and I **don't want to talk** about it.
	38	2a, 2b	No one showed up – irresponsibly so. S2 talks about how people committed to the group but were absent – and he's **mad** about it since he put emphasis on 'commitment'
	39	2a	Nobody showed up, and the speaker is **unhappy** about it.

regards comprehension of implicata. Perhaps the solution to these methodological dilemmas is simply to employ both methods, as done in this experiment, each supporting the other.

4.2 - Research Questions 1 & 2: Grice's Maxims

The first and second original questions of this study ask to what degree informants report Gricean maxim applications as interpretation strategies for implicature interpretation and to what degree informants are able to naively identify Gricean maxim floutings. This section will present results & analysis thereon.

4.2a – Research Question 1: Reporting Gricean Maxim Applications as Interpretation Strategies

Incidences of all four of Grice's maxims were reported in the introspective written response sections (see Tables 4.3-4.6). What follows are prose summaries and corresponding tables which record the full open-ended responses of informants who correctly identified Grice's respective maxims as interpretation strategies in their introspective reports.

Four NNSs and four NSs reported using Grice's maxim of Relation to process Segment 1's implicature (see Table 4.3 below). Target phrasing for Segment 1 included anything related to "irrelevance". Also, because of Bouton's explanation (1989) of this segment's Pope Q type of implicature, targets also included "metaphor" or any explanation of the device that is the emphatic, same-answer reply to a question with an unrelated, common-knowledge rhetorical question.

Table 4.3: Reports in Segment 1 of Relation Maxim as Interpretation Strategy

	Informant	Question	Response (*sic, except for author's emboldenments*)
NNSs (4/19)	4	2b, 8	Bc he/she gives **unrelated** sentence with a certain answer as common sense. So he/she treats 'he/she likes math' is natural as the sun rises in the east./ *D Other:* **irrelevant at surface**, but answers the question actually seems
	7	2a, 2b	I'm not sure. It's not clear! S1 asked S2 about whether S2 like math or not. But see the answer of S2 'Does the sun rise in the east?' Yes! It dose, but it **NOT relevant** to the question of S1./ I'm trying to find the relationship between S1's question and S2's answer. And I've found nothing.
	8	2a	He asks whether the sun rises in the east and uses this as a **metapher** to say 'yes' because the sun rises in the east. In this way he doesn't respond **directly** to the question.
	10	2a, 8	S2 uses **metaphor** to explain that he certainly likes math./ *B irrelevant* **(metaphoric)**
NSs (4/19)	21	2a, 2b	The answer to the question does the sun always rise in the east yes; therefore, the answer to S1's question is yes./ S2 is being a bit sarcastic, so once you understand that, then you can understand the respone.
	30	2b, 3b	Because the answer had **nothing to do** with the question./ It's the easiest and most **relevant** response.
	31	2b	His response is made in jest. He acts like the question was silly – obviously he likes math just as it is obvious that the sun rises in the east.
	35	3b	This is more clear and **relevant** to the conversation.

Table 4.4: Reports in Segment 2 of Quality Maxim as Interpretation strategy

	Informant	Question	Response (*sic, except for author's emboldenments*)
NNSs (1/19)	4	2b	because from what S1 says we can conclude that S2 has recommended for many times. So s/he is joking when S1 want to check last time
NSs (4/19)	27	3b	It is clearer, and without **sarcasm.**
	21	2a, 2b	S2 might be a little irritated with S1 for not already taking the classs, so S2 is definitely being **sarcastic**./ S2 still thinks it's a good idea to take the class.
	28	6	*B is not true* **literally** taken
	36	2b, 3b	S2 is being **sarcastic.** By overemphasizing that the class is awful and given that S1 already knows how S2 feels about the class, S2 implies that S1 should obviously take the class./ This answer is clearer and not as rude or **sarcastic** as the first answer.

Table 4.5: Reports in Segment 3 of Quantity Maxim as Interpretation strategy

	Informant	Question	Response (*sic, except for author's emboldenments*)
NNSs (2/19)	2	8	*D Other:* relevant yet **too detailed**
	8	2b, 3b	He talked about all the things he needs to do **before he finally** will have his schedule./ S2 gave **too much information** in his actual response **before finally** answered the question.
NSs (7/19)	21	2b	S2 seems put out with her friend; I noticed that she **takes a while** to answer a straightfoward question.
	22	2b	That is a completely **unecessary waste of breath** and is haughty and rude
	27	3b	It takes out all the **unnecessary information** from the original response.
	30	2b, 3b	The **long** explanation is understandable, but **too detailed** because S2 might be irritated./ It is the most **streamlined** way of explaining why S2 doesn't know his/her schedule.
	32	2b	By the **amount of words** given.
	36	3b	This answer is more polite and less **long-winded**. It explains that the speaker is busy without having to be mean about it.
	38	2b, 3b	The **long** story is a reflection of the frustration and negative response S2 has in store./Simple, to the point. Gets your emotions across without the clutter & **saves time.**

Table 4.6: Reports in Segment 4 of Manner Maxim as Interpretation Strategy

	Informant	Question	Response (*sic, except for author's emboldenments*)
NNSs (2/19)	4	2b	The **elevated language** he uses doesn't express much excitement about the session. It sound disappointed. S2 didn't want to say and show directly how disappointed he was.
	8	3b	The **elevated language** didn't sound appropriate for a conversation of two classmates.
NSs 10/19	21	3b	The answer does not sound like a **robot speaking**.
	22	2b, 3b	Their **formal tone** implies they are upset but trying not to feel emotional about it./ **Simple language** is always better.
	25	2b	The **verbiage** he uses.
	27	3b	It is just a **rewording** of the response, because it already makes sense, it just states it **more outright**.
	28	2b, 3b	because his **wordy** answer says so/ simplify – no need to get **lost in words**
	29	3b	It sounds **less technical**/verbose (but also less humorous).
	30	2b	I merely explained it in **Layman's terms**.
	33	2b	He responds in very **robotic, jaw-clenching manner [vocab is a bit unnatural…]**
	36	2b, 3b	By using superfluous, **overly-complicated speech**, S2 is trying to save face and sidestep around the issue, indicating that S2 doesn't want to talk about it./This way you **avoid using snobby complex words** that try to mask the truth, but you still don't have to directly say that no one showed up.
	39	2b, 3b	The **formal tone** is **inhuman sounding conversationally**, so there must be inner turmoil./ Short, concise, **conversational."**

One NNS and four NSs reported using Grice's maxim of Quality to process Segment 2's implicature (see Table 4.4). Targets included "false, untrue, sarcastic…" but also identifications of the cleft between the true given context and the untrue reply of S2.

Two NNSs and seven NSs reported using Grice's maxim of Quantity to process Segment 3's implicature (see Table 4.5). Targets included "too much information/detail, finally getting to the point, length of time…".

There were two NNS and ten NS reports of using Grice's maxim of Manner to process Segment 4's implicature (see Table 4.6). Targets included any description of pesrpicuity or lack

thereof – complexity versus simplicity in the reply's phrasing/wording, like "formal, elevated, technical… "

4.2b – Research Question 2: Identifying Gricean Maxim Floutings

Table 4.7 (below) presents the forced-answer results for the one specific multiple choice question in each segment that highlights the particular Gricean maxim flouted in that segment. Forcing the selection of an answer in a discrete item like this addresses a different shade of research question from the above section. Instead of asking what *do* informants do, it asks what *can* informants do. Here there is evidence that all four maxims *can* be identified, but the degrees to which this is so vary. A few informants (four each of NNSs and NSs) correctly identified the flouting of the Relation Maxim. A few NNSs (three) and many NSs (sixteen) correctly identified the flouting of the Quality Maxim. Many informants (eighteen NNSs, nineteen NSs) correctly identified the flouting of the Quantity Maxim. An intermediate number of informants (seven NNSs, twelve NSs) correctly identified the flouting of the Manner Maxim. These results would greatly benefit from a greater number of dialogue segments per maxim to increase their statistical meaningfulness. As they are, the results are likely too influenced by the single dialogue used.

For example, the Pope Q implicature type of Segment 1 may not be as appropriate to the processing of the Relation Maxim as Bouton (1989) assumes, or its processing load (according to Taguchi (2002)) may simply be too high. Although this study did target non-formulaic, high-processing load PCIs, maybe too much of a good thing does exist. On the other hand, maybe Relation Maxim floutings are so common that informants are actually accustomed to acknowledging their actual Cooperation. It is also very likely that the testing format here could use improvement somehow, because it seems that informants were considering the implied, not explicitly stated, content of S2's reply when selecting their answers to Question 8 in Segment 1.

The explicit content seems so very clearly, unequivocally unrelated to S1's question, that the low numbers of correct maxim flout identifications here surprised this author, especially when comparing NS lows here to highs for Segments 2 and 3. The test is most likely to blame.

Similarly, the dialogue of Segment 3 (where S2's lengthy reply concerns hectic scheduling) very likely lends itself too obviously to the correct answer for this question. It is easy to interpret this reply as having too much information without having to understand in any way that the flouting of this maxim results in an implicative exploitation here. This is proven by the facts that only three total informants reported in elicitation the correct implicatum for this segment (see Table 4.2) and only ten NNSs correctly selected this implicatum in forced answer (see Table 4.1), while nearly all informants (minus just one NNS) correctly identified the maxim flout in forced answer.

Table 4.7 - Correct Multiple Choice Identifications of Targeted Maxim Floutings

	Segment 1 (Relation Maxim) Question 8 Answer B "the information is: *irrelevant*"	Segment 2 (Quality Maxim) Question 6 Answer B "*is not true*"	Segment 3 (Quantity Maxim) Question 7 Answer C "the amount of information is: *too much*"	Segment 4 (Manner Maxim) Question 9 SAnswer B "*not stated in clear, simple wording*"
NNSs	4	3	18	7
NSs	4	16	19	12

4.3 – Research Question 3: Applying the Principle of Cooperation

The third research question of this study asks to what degree informants naively apply the CP. In this study, several sets of CT questions and their corresponding results address this research question. Results indicate that informants naively apply the CP to a very high degree. It appears to be a natural, inherent processing or governing mechanism for both native and non-native speakers. Results tables, summaries, and analyses follow.

Let's begin by looking at Segment 5. First, it is important to note that every single informant correctly selected the intended (here explicit and literally cooperative) meaning for S2's reply in Segment 5 when forced to select a multiple choice answer in Question 5. Also, all nineteen NNSs and sixteen NSs reported in free response (Question 2a) the correct meaning of the utterance. When compared to the 0-5 informants in both groups who reported the correct (there implied) meanings per segment in Segments 1-4 (see Table 4.2) and the 10-15 NNSs who identified the correct meanings in Question 5 of those segments, (see Table 4.1) the difference is clear. Simply the fact that so many informants actually did understand Segment 5, the literally cooperative segment, is clear evidence that the CP is the unmarked form in speech. It also clear from these data that NNSs have an undeniable propensity for literal meaning comprehension accuracy in NNL over implied.

In Table 4.8 (below), instances are recorded where informants, in Question 3b of the implicature-carryins Segments 1-4, reported literal cooperation as their reasoning for their given recommended replies. Nine NNSs identified this in a total of 20 instances over all four segments (seven for Segment 1, four for Segment 2, seven for Segment 3, and two for Segment 4). Six NSs did so in a total of 10 instances over all four segments (three for Segment 1, two for Segment 2, two for Segment 3, and three for Segment 4). This shows a strong preference by both groups for literally cooperative speech over implicature . It also suggests the constancy with which the CP is readily applied in any given interpretation, appearing throughout all segments of test results.

Table 4.8: Reports in Segments 1-4 Which Identify and/or Support Literal Cooperation

	Informant	Segment	Question	Response (*sic, except for author's emboldenments*)
NNSs (9/19)	1	1, 2, 3, 4	3b	simplify and highlight the meaning./simplify the meaning…/simplify/to make it clear
	2	1, 3	3b	short & clear! It's quite easy to understand. Yet may not be humorous./It's clear and simple, while rude.
	3	2, 3, 4	3b	short/short & simple/direct
	4	3	3b	Because what she/he says just means this. And this sentence is easy and gives a direct answer to the question.
	5	1	3b	It's direct & easy to understand.
	6	1, 3	3b	More straightforward. More understandable. And, add some humor./more simpler and concise. Won't cause confusion.
	8	1	3b	It would be more direct and concrete than the response of S2.
	9	1, 2, 3	3b	straightforward/Straightforward. Won't cause any confusion. Or trouble./Just told the S1 directly.
	12	1, 2, 3	3b	It's direct & more polite./The Sp2 should clarify his/her opinion on the class to the Sp1./The Sp2 could speak more clearly.
NSs (6/19)	21	1, 3	3b	The answer is much more straightforward. S1 does not have to think twice about the respone to understand it./The answer is straightforward and takes away the anger in the respone.
	22	4	3b	Simple language is always better.
	27	1, 2	3b	It is clearer and doesn't require anyone to infer./It is clearer, and without sarcasm.
	28	1, 2, 4	3b	simple and to the point/simple/Simplify - no need to get lost in words.
	30	4	3b	Easier to understand.
	38	3	3b	Simple, to the point. Gets your emotions across without the clutter & saves time."

In Table 4.9, instances are recorded from the literally cooperative Segment 5 in which informants naively reported applying the CP, either as an interpretation strategy or in recommending the same literally cooperative language use as that given in the dialogue. Three NNSs and nine NSs did this. Targets included "explicitness, literalness, appropriateness, acceptability, clarity, means what says, …"

Table 4.9: Reports in Segment 5 Which Identify Literal Cooperation

	Informant	Question	Response (*sic, except for author's emboldenments*)
NNSs (3/19)	1	3b	**clear** enough
	8	2b, 3b	S2 uses **clear and simple** words to say what he wants to say. There is no hint for an ironic or sarcastic sound that could change the meaning of the words. I wouldn't change the response because language and information content seems **appropriate** to me so does as the whole response.
	12	3b	The dialogue is ok. It's **clear.**
NSs (9/19)	21	3b	There is **no ambiguity** in this response, so it does not need to change.
	22	3b	That's a perfectly **acceptable** way to answer it.
	24	3b	He **explicitly** says everything he needs to.
	29	2a-3a	S2 **means what** he/she **said.**/ It is **unambiguous./** I have no recommendation
	31	2a-3b	He **means** just **what** he **says/** normal & **appropriate** response/ He responded perfectly./na"
	32	3a, 3b	_____/ I think its stated **fine.**
	36	2a	It's pretty **literal…**
	37	2b-3b	S2 **flat out says** it is a good idea and exchanges phone numbers./ (keep it the same)/ It is a good response.
	38	2a	It's very **straightforward.**

Table 4.10 shows overall how many of the Segment 5 open-ended responses were scored as literally cooperative when converted for discrete scoring. The evaluation criteria were relaxed a bit for Questions 2b-3b to include targets such as "It's okay/good/fine". Under these looser criteria for 'correct' reporting , results show that almost all NSs reported literal cooperation as the preferred style of reply and described it appropriately (Questions 3a-b). NNS report incidence is also greater under these criteria.

Table 4.10: Responses in Segment 5 which Support Literal Cooperation

	Question 2a	Question 2b	Question 3a	Question 3b
NNSs (n/19)	19	2	10	6
NSs (n/19)	16	8	16	16

All the results in the section point to great applicability of the CP by naïve informants.

4.4 – Research Question 4: Operationality of Grice's Theory

With all the above results from sections 4.2 and 4.3 in mind and introducing a few more in this section, we can now try to tackle the fourth research question: Can Grice's Theory of Implicature be a valid processing model for this phenomenon? Can this much-critiqued theory be shown operational in use? Such a small pilot study could never pretend to answer this very interesting question conclusively – nor could a large study of this same limited design format do so– but some direction toward the answering of this question exists here.

First, let's look at the CP. There is so much application of the CP throughout the results of this study, as described above in section 4.3, that one must assume it is operational. Further experimentation would be needed to prove how this is actually achieved, but it is clear in this work that both NNSs and NSs use the CP and prefer literally cooperative speech.

Second, let's look at maxim applications. The results here certainly show an ability to apply the maxims and some tendency toward doing so in elicitation. This indicates that Grice's maxims may be operational as universal processing mechanisms. Further experimentation is definitely needed.

Lending particular strength to the operationality of the Relation Maxim as part of a processing model are the reports of Informants 7 and 30 (see Table 4.3 above), who did not accurately comprehend the implied meaning (in either Question 2 or 5) but could clearly tell which maxim was being flouted. ParticularlyInformant 7 reports a thorough, processual search for meaning in S2's reply through use or application of the Relation Maxim.

One example of data from this study that suggest that not just Grice's individual maxims or CP are legitimate, but that the entirety of his theory may be legitimately functional for processing is found in Informant 4's reply to Question 8 in Segment 1:

D Other: **irrelevant at surface**, but answers the question actually seems

This describes perfectly, from a naïve informant, how Grice's theory of PCI generation and comprehension works: that a maxim (here Relation) is flouted by S, but when H calculates the intended meaning – by presuming that S is still cooperating – to reveal the implicative exploitation, it is seen that the maxim non-compliance was only superficial and that cooperation is just achieved implicitly.

4.5 – Research Question 5: Preferences for Literal Cooperation or Implicature Use

The fifth research question asks whether or not informants prefer speech free from or containing the phenomenon of implicature.. That is to say, do they prefer the use (which term here includes both production and comprehension) of PCI-carrying utterances or do they prefer something else? Because this experiment examined only PCIs and literally cooperative utterances, without examining other types of utterances (for example, Gricean clashes, opting-outs, violations, GCIs, or conventional implicatures, etc. (Grice 1989)), the only other preference option in this study is literal cooperation. Therefore, PCIs and literal cooperation will contrast each other in this section. This default is, however, fitting to the design of the study because of the influence of Moeschler (2004, 2007), who suggested that it is precisely that the differences in meaning between the explicature (literal, explicit content of an utterance) and implicature and the requisite processing that occurs for their correct interpretation is what trips NNSs up. He strongly suggests that NNSs prefer if not require literal speech of their NS interlocutors to ensure

their comprehension. Throughout this study, there is ample evidence demonstrating informants' preference for literally cooperative speech, especially NNSs.

First, to return briefly to sections 4.2 and 4.3 above, it is clear from those results that literal cooperation is preferred over implicature use. It was conclusively well understood, while the implicatures were not. All incidences reporting the application of the CP yielded higher numbers than did the maxims. Nearly all recommended replies elicited in Question 3a for Segments 1-4 were more literally cooperative than the implicative replies contained in the dialogues, and most of them were perfectly literal. In fact, only a handful of informants ever reported preferring the implicatures over a possible literal alternative and did not recommend any changes to S2's replies. Table 4.11 (below) records where informants did just so. Of course, zero NNSs did this, and just three NSs did so in a total of only five instances over three different segments (1, 2, and 4, but not 3). This is very important, strong evidence that the preference against implicature use and for literally cooperative speech is real.

Table 4.11: Reported Recommendations in Segments 1-4 to Use the Implicature As Is

	Informant	Segment	Question	Response *sic*
NSs (3/19)	26	1	3a/3b	*no recommendation*/They're stating how they like math truthfully, honestly, and with a slight sense of humor. Facial expression would play a role in this conversation though.
	26	2	3a	*I wouldn't change words, I'd ensure the tone in my voice and facial expressions matched my intented message*
	31	1	3a/3b	_____/I like his response.
	37	2	3a/3b	(keep it the same)/they are good friends. They will understand.
	37	4	3a/3b	keep it the same/Using verbose language somehow shows disappointment here.

Now let us consider other data previously undiscussed. In response to Question 10, every single informant in both groups said that the literally cooperative meaning of S2's reply in

Segment 5 was easy to understand. In constrast, 7-16 informants in each group said that each implicature in Segments 1-4 could cause confusion. These numbers should actually be higher for the NNSs since many of them did not accurately understand the dialogues' meanings and were themselves confused unknowingly, despite answering that it was easy and clear. Ease of understanding in literal speech comprehension paired with confusion over implicature suggests a preference for literally cooperative speech free from implicature.

Next comes the consideration of the Addendum results. The Addendum questions do not explicitly ask for informant preferences, but they ask other opinions or perceptions of informants, like implicature use frequencies and comprehension difficulty ratings, that may be related to preferences. Before presenting these results, one should know, in order to explain the presence of four "n/a" responses in the next sequence of tables, that two tests from each group were returned with unscorable Addendum sections (two were missing, one was torn down the middle, and one informant had circled multiple numbers per question). Also, one should remember that the Addendum questions only applied to the implicature-carrying Segments 1-4.

Table 4.12 below shows a difference between NSs and NNSs in their ratings of implicature comprehension difficulty. Bafflingly, only two of all the informants rated it difficult to understand the PCIs used in the CT (one NNS and NS each), despite much miscomprehension as described in section 4.1. However, more NSs than NNSs rated them as easy to understand, with eight NSs rating them as 'Very Easy' and seven NNSs rating them of 'Average' difficulty. This is, as stated before, not direct evidence of preferences, but it indicates that NNSs are likely to prefer literal speech over implicature use more strongly than NSs, who report finding implicatures easier to understand than do NNSs.

Table 4.12: Difficulty Ratings of Understanding S2's Intended Meaning

	1 Very Easy	2 Somewhat Easy	3 Average	4 Somewhat Difficult	5 Very Difficult	n/a
NNSs	4	5	7	1	0	2
NSs	8	5	3	1	0	2

Below, in Table 4.13, it is shown that both groups of informants believe overall that native English speakers speaking English use implicature more frequently than do native speakers of other languages in any language, including English, or English speakers speaking other languages. This is seen in that the most selections of frequent ratings are present in both groups' responses to Addendum Question 2 – the first results box of this table – and the NS responses to Addendum Question 4 – the third results box of this table.

Table 4.13: Responses to Addendum Questions 2-5

	1 Very Infrequently	2 Somewhat Infrequently	3 Average	4 Somewhat Frequently	5 Very Frequently	n/a
General implicature use frequency in English by English NSs						
NNSs	0	4	5	7	1	2
NSs	1	1	4	4	7	2
General implicature use frequency in all languages by all NSs						
NNSs	1	2	10	4	0	2
NSs	1	7	5	2	2	2
Personal implicature use frequency in English by informants						
NNSs	5	6	4	1	1	2
NSs	2	4	2	6	3	2
Personal implicature use frequency in any/all language(s) by informants						
NNSs	1	5	6	3	2	2
NSs	4	3	5	4	1	2

In Table 4.14, we see a similar trend as just described. Here, each informants' ratings to Addendum Questions 2-5 regarding implicature use frequency were compared internally against the same informant's other ratings in order to achieve a sense of rank. Here it is recorded as

whether the informants ranked their perceptions of the frequency of implicature use – by themselves personally, in the first box, or by people in general, in the second box – as equal in all languages or as higher or lower in English than in other languages. For personal use (which compared Addendum Questions 4 and 5), the majority of NNSs think that they themselves use implicature less frequently in English than in other languages (including their native languages), while only three NSs think that they themselves use implicature less frequently in their native English than in other languages. In general terms (comparing Addendum Questions 2 and 3), very few informants in both groups thought that people in general used implicature less frequently in English than in other languages, and most informants thought that people in general did just the opposite, by using implicature more frequently in English than in other languages.

Table 4.14: Frequency Ratings Rankings Compared Individually Per Informant

	higher in English	equal	lower in English	n/a
Personal implicature use frequency in English versus other languages				
NNSs	3	4	10	2
NSs	7	7	3	2
General implicature use frequency in English versus other languages				
NNSs	7	8	2	2
NSs	11	5	1	2

These last two tables also do not directly indicate preferences for or against implicature use, but they do indicate a few telling things related to preferences, since preferences themselves are about use frequencies. Most NNSs do not think they use implicature as often or equally often as in other languages. Most everyone thinks implicature is common in English, at least equally but mostly more so than it is in other languages. Given these two facts, the best possible explanation for why NNSs aren't using it often in English is that they prefer not to do so. Maybe they prefer not to do so because they do not adequately understand the phenomenon in L2

English yet; their opinions could admittedly change if their L2 implicature proficiency were to improve.

Overall, a strong general trend toward preferring literal speech over implicative speech exists in this data, especially for NNSs (at least in English).

CHAPTER 5

DISCUSSION

This chapter will present a summary of conclusions made from this experiment, limitations found therein, suggested directions for future research, and possible benefits from this study to applications.

5.1 – A Summary of Conclusions

The results of this pilot study, although largely inconclusive for reasons elaborated in section 5.2, indicate several overall patterns. First, they indicate that NNSs show notably low accuracy in the comprehension of PCIs in English. Second, these results also show that both NSs and NNSs can and do use Grice's maxims as implicature interpretation strategies. These results also demonstrate that speakers do naturally apply the CP in several ways, including by recommending the use of literally cooperative speech and using the concept and terms of the CP to describe and interpret the meaning of literally-meant speech. Lastly, the results of this pilot study indicate a very strong preference for literal speech over implicature use, especially in NNSs. All four of these general conclusions actually achieve the research objectives set forth in Chapter 1, section 1.2e, to the greatest extent possible in this research.

Some (even) more speculative conclusions can be drawn from this work. First, the apparent operationality of Grice's four conversational maxims and applicability of his CP to several aspects of implicature use, as shown here, support the idea that Grice's theory is a legitimate processing tool employed by speakers naturally. The fact that such was shown by both NSs and NNSs support the idea that Grice's theoretical model is universal. Also, the strong

preferences shown here for literal speech not only empirically indicate, with little speculation, that Moeschler's claim (2004, 2007) that NNSs prefer if not require literally cooperative speech in L2 is true but also suggest (more speculatively) that the NNS implicature misunderstanding found here and elsewhere is caused by NNSs assuming literal cooperation in all speech.

Beyond these two claims, this study is situated in a perhaps unusual situation in relation to the rest of the field. It is a methodological extension of Devine (1982), Bouton (1988, 1989), and Taguchi (2002). It shares a research focus with each: Devine's testing of Grice's model, Bouton's comprehension accuracy, and Taguchi's interpretation strategies. Otherwise, it is a horse of its own color. Much further research would be required to prove conclusively any of the conclusions presented above.

5.2 – Limitations of the Present Study

5.2a – Major improvements that would strengthen this study

This pilot study was limited in many ways, all or at least most of which can be improved in further research. Were this pilot study to be expanded or continued, improvements in participant sample size, amount of testing data, and complexity of statistical analysis would have to occur.

More informants are needed to improve statistical validity. In line with the field in general, 50-500 speakers per group would be excellent. This could be achieved by a collaboration of multiple researchers across the United States, all proctoring the test to reach multiple pools of eligible informants, or by administration to pools of newly arrived NNSs at different key times, like college orientations at semester onsets.

The length of the test was greatly limited by budget. This work would benefit greatly from the acquisition of funding with which to better incentivize recruitment and to justly reward

informants for their participation time. The pilot test here could only include one dialogue per target item in order to maintain a practicable participation timeframe of under one hour for volunteers. Multiple-hour participation not only deserves but also would not be recruitable for less than monetary payment. In line with the field in general, 3-30 dialogues per target item would be excellent. Such increases in testing data are necessary to improve statistical validity, just like the participant sample size.

Although this pilot study primarily concerned itself only with the statistical recording of raw scores for such preliminary results as these, more highly advanced statistical analysis could be done here to strengthen the work in many ways. For example, patterns or relationships between the answers to different multiple choice questions could reveal possible processing hierarchies in Grice's framework. Perhaps one maxim is more salient than another in use. For further example, many of the tables is Chapter 4 recorded only the raw scores of "correct" answers, but "incorrect" answers provide many other valuable avenues of analysis.

The scope of the research done here (and elsewhere) could also be expanded to include recruits of different target demographics. For instance, the requirement of collegiate affiliation in this pilot study's recruitment could be a limitation, implying a bias toward a certain level of scholastic achievement and classroom language training that disregards naturalistically acquired proficiencies. The implicature comprehension accuracy and interpretation strategies of non-collegiate minds and those tested here are of equal validity and, at least as regards NNSs, could provide valuable insight into any differences between classroom-trained and other proficiencies. These new recruits could also include children as informants.

5.2b – Major problems encountered during this study

The most difficult thing about this study was the contrivance of dialogues. I actually worked on this stage of the project for nearly two years, with constant analytical consideration on my part and discussion and editing with fellow linguists. The details of the dialogue requirements for this study were discussed above in section 3.3b and were very difficult to achieve, especially the maximization of cultural neutrality. To attempt in future research to ensure that all participants share the same contextual knowledge base and world view, one could teach participants the required context prior to testing.

The second most difficult thing about this study was recruitment. Many NSs can be recruited from introductory linguistics classes fairly easily for graduate research such as this; this study intended to do so but instead recruited students from Dr. Don McCreary's upper level English classes. Finding enough qualifying NNSs to make a statistically accurate sample number, on the other hand, is really best done at orientations or in English classes that are specifically for international students, which this study did not do.

The third most difficult thing about this study was evaluation of the introspective written reports, as Bouton (1989) suggests. Ensuring accuracy and even impartiality in this free response evaluation and development of evaluation criteria was very challenging and admittedly may have been done imperfectly. The evaluatory tedium and methodological risk involved are likely to prevent many researchers from employing this method in this field, especially when other methods exist and computerized testing is available today.

5.3 – Directions for Future Research

Although research in this field has many inherent challenges, some of which were detailed above, I believe that this pilot study shows the great potential for experimental research

in the field of L2 implicature use. Here are some ideas for future research in this field, starting with ideas relating to the work done in this thesis and then continuing to those extending from other work already done in the field.

The two tables of 4.13 and 4.14 both indicate a strong anglocentricity in perception of implicature prevalence. Further study could be conducted to investigate whether implicature really is more prevalent in English than in other languages (perhaps through great corpus analyses or an implicature production experiment).

The research should also be expanded to investigate different target languages. Taguchi's work on pragmatic acquisition in Japanese as a FL (2008c) is the only such work yet to address a non-English target language. L2 English is the most popular language of SLA research for various reasons including the world-wide predominance of English-speaking SLA scholars. Because this type of implicature analysis is best conducted by NSs of the targeted L2, the pool of eligible researchers on non-English implicature is very limited. Disbanding this anglocentrism will greatly improve the quality of the body of knowledge on this topic and is the only way to truly test the universality of Grice's – or any other – model.

Although Bouton (1988, 1989, 1992, 1994) covered well the acquisition rates of implicature comprehension accuracy over various time periods, we could look at changes over time in NNS implicature interpretation strategies, as Taguchi (2002) did indicate differences in strategy use between lower and higher proficiency informants. Bouton (1990) also insisted that implicature be included in explicit classroom instruction and detailed suggestions as to how so, so I also suggest as a future direction of research that someone extend Bouton's research on comprehension accuracy in an immersion environment by performing a study in which NNSs are first pre-tested, then explicitly taught implicature in the classroom, and lastly post-tested to

gauge gains made from receipt of explicit classroom instruction. Such a study would fill that hole in our body of knowledge, but also greatly serve in linguistic applications, which leads us to our next section.

5.4 - *Applications to L2 Classrooms and Intercultural Communication*

This thesis showed that people, both NSs and NNSs, perceive implicature to be an important or at least common phenomenon in English (and much more so than in other languages), one which NNSs are not themselves using in English (see section 4.5). When coupled with the degree, seen here in this study in section 4.1 and elsewhere, of misunderstanding which NNSs suffer, it is easy to see that it undeniably merits much more explicit attention in L2 English instruction and materials than it presently enjoys! Explicit implicature instruction is necessary, at least for generally proficient NNSs.

I suggest that these curricula, textbooks, and classroom practices begin by addressing the suggestions of Bouton – whose entire article (1990) describes and seeks to remedy just this problem. I also suggest, personally, that these materials and teachers include instruction on possible theoretical models for the implicature phenomenon (like Grice's), because inherent in these theories may be valuable interpretation and production strategies. As found at least in this thesis, Grice's maxims and CP are operational and may greatly and easily help language learners acquire implicature skills.

To also include a bit of personal experience here, I have found that it only takes one short lesson to teach undergraduate linguistics students – or anyone interested – the basic tenets of the implicature phenomenon and Grice's theory so that they can apply it right away to all the speech they ever encounter, possibly forever, whether they remember its specific terminology or not. It changes the way you think about literal speech and implied meaning, and, for me and all those I

still know who at one time studied it, it improves the ability to understand of implied meaning, even for NSs in NL. I actually suspect that this happened to Excluded Participant 1, who had clearly studied Gricean implicature before (possibly even in my class), but maybe only remembered three of its specific terms at the end of the test and none of its umbrella terms ("implicature" or "Grice"…) in the beginning on the LCP. (The discipline could actually benefit from a study on this, too – whether explicit implicature instruction improves NS implicature proficiency.) This is all to say that L2 explicit instruction in implicature could be a very simple and quick but powerful instructional addition. It should be done without delay.

Similarly, for NSs, this thesis and other work suggest that we all may have a responsibility to NNSs to try to adjust our speech patterns when interacting with NNSs. If we would like to promote as much successful communication as possible, we should speak as literally as possible, avoiding implied meaning as much as possible, in order for even highly proficient (but newly immersed) NNSs to best understand us.

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APPENDIX A

RECRUITMENT ANNOUNCEMENT

SEEKING NON-NATIVE ENGLISH SPEAKERS

for participation in linguistic research

Must be college students or employees

Spend just 30-45 minutes

reading dialogues and completing a short written test.

Refreshments available at sessions!

Please email erimit@uga.edu

for more information on the study

and to discuss session scheduling

(times/locations in Athens on campus).

"I am a UGA graduate student conducting a study on how people understand language in context. I seek fifteen non-native speakers of English who are college students to participate as informants by attending one 30-45 minute group session where I will serve refreshments to informants as they complete a short written comprehension test. There are no direct benefits or known risks associated with this research. Your name will not be recorded and your identity will remain confidential at all times."

APPENDIX B

INFORMATIONAL LETTER OF CONSENT

September 1, 2010

Dear Interested Participant:

I am a graduate student in the Linguistics Program at the University of Georgia under the direction of Dr. Don McCreary, Department of English, University of Georgia. I invite you to participate in a research study titled "Implicature Comprehension in L2" that I am conducting. The reason for this study is to test how native English speakers and English language learners understand the intended meanings of speakers in conversation differently or similarly.

Your participation in the study is voluntary. You can refuse to participate or stop taking part at any time without giving any reason, and without penalty or loss of benefits to which you are otherwise entitled. Your name will not be recorded. You can ask to have all of the information that can be identified as yours returned to you, removed from the research records, or destroyed. The results of the research study may be published, but your name will not be used. In fact, the published results will be presented in summary form only. Your identity will not be associated with your responses in any published or stored format.

If you volunteer to take part in this study, you will be asked to do the following things for about 45 minutes total:

1) Provide background information, confidentially.

2) Complete a written comprehension test about your understanding of written conversations.

The findings from this project may provide information on second language acquisition and intercultural pragmatic competence. They may be used by educators to better assist students who are learning second languages or studying communication. There are no direct benefits expected from participation. There are no known risks or discomforts associated with this research.

If you have any questions about this research project, feel free to call me at (xxx)-xxx-xxxx or email me at erimit@uga.edu. I will answer any further questions about the research, now or during the course of the project.

Questions or concerns about your rights as a research participant should be directed to The Chairperson, University of Georgia Institutional Review Board, 612 Boyd GSRC, Athens, Georgia 30602-7411; telephone (706) 542-3199; email address irb@uga.edu.

By completing and returning this questionnaire, you are agreeing to participate in the above described research project.

Thank you for your consideration! Please keep this letter for your records.

Sincerely,

Erin Beltran Mitchelson

APPENDIX C

LANGUAGE CONTACT PROFILE

The responses that you give in this questionnaire will be kept confidential. This cover sheet is to

allow the researcher to associate your responses with your personal information if needed.

However, only the people entering your responses into the computer will see this personal

information. An identification number will be used in place of your name when referring to your

responses in analysis. Every effort will be made to keep your responses confidential. Thank you

for your cooperation. The information that you provide will help us to better understand the

language backgrounds of the participants in this study. Your honest and detailed responses will

be greatly appreciated.

Identification Number: _____

Part 1: Background Information For All Participants

1. Gender: _____   2. Age:_____   3. Country of birth:

_____

4. What year are you in school? (circle one):

Freshman   Sophomore   Junior   Senior   Graduate student   Postdoc

Other _____

5. What is your major? _____

6. Have you studied Linguistics before? _____

If yes, what course(s) did you take? _____

If yes, have you studied Grice's Theory of Implicature? _____

7. In what language(s) did you receive the majority of your *precollege* education?

_____

8. Please describe below any exposures you have had to different languages, including your own

native language and any others. The *nature* of such exposure could be that it is your native

language or another language used by your family or that you speak in your home, or it could be a language you studied in the classroom or encountered during a study- or work-abroad program, etc. Please rate your language abilities (listening, speaking, reading, writing) in each of these languages on the scale of:

0) Poor   1) Good   2) Very good   3) Native/native-like

If more than four, list others on the back of this page.

	Exposure 1	Exposure 2	Exposure 3	Exposure 4
Language				
Location				
Nature				
From when to when				
Listening ability				
Speaking ability				
Reading ability				
Writing ability				

Part 2: For Non-Native Speakers of English

9. On average, how often did you *communicate* with native or fluent speakers of English *in English* in the past year? This includes your native or fluent English-speaking friends, your instructor or classmates outside of class, service personnel (e.g., bank clerks, cashiers), etc.

0) never   1) a few times a year   2) monthly   3) weekly   4) daily   5) always

10. On average, how often you did you watch television, movies, or videos in English; read newspapers, novels, or magazines in English; or listen to songs in English, etc.?

0) never   1) a few times a year   2) monthly   3) weekly   4) daily   5) always

11. List any other activities that you commonly did using English in the past year prior to today.

APPENDIX D

COMPREHENSION TEST

INFORMANT # _____

INSTRUCTIONS

Step 1) Read the context and transcript of the dialogue.

Step 2) Read the questions that follow.
Circle or write in your responses.
Go in order: read and answer Question 1 before reading and answering Question 2, etc.
Complete every question.

Step 3) Please feel free to write anything extra to explain any of your answers or add any extra thoughts.
The researcher is very interested to know all of your thought processes on this test.

Assume that all the speakers in the dialogues are friends who attend the University of Georgia.
Speaker 1 = S1   Speaker 2 = S2

All possible responses are valid.

You can ask the researcher questions if you don't understand the written test.
Extra sheets of white paper are available if needed.

PRACTICE SEGMENT

Context: a conversation between two students who are math majors

Dialogue:
> *Speaker 1: You know, I'm not doing very well in my classes. I think I should review the basics before the fall semester begins. If I take Calculus this summer, could you tutor me?*
> *Speaker 2: I'm going to Europe.*

1) Did you understand the conversation? Circle one.
    A) Yes.
    B) No.
    C) I'm not sure.

2a) If you had to explain to a friend what Speaker 2 means in this conversation, what would you say?

2b) Why do you think this is so? What are you thinking about when you explain it this way?

3a) If you could recommend a way for Speaker 2 to respond to Speaker 1 here, what would you say?

> *Speaker 1: ... could you tutor me?*
> *Speaker 2: "_____*
_____*."*

3b) Why do you think this? What are you thinking about when you recommend this?

4) What do you think was the intended meaning of Speaker 1's question? Circle one.
      A) "Can you tutor me this summer?'
      B) "What are your summer vacation plans?"
      C) I don't know/I'm not sure.
      D) Other: _____

5) What do you think was the intended meaning of Speaker 2's reply? Circle one.
      A) "I cannot tutor you this summer; I have other plans."
      B) "I'd like to invite you to go to Europe with me."
      C) I don't know/I'm not sure.
      D) Other: _____

6) Given the question by Speaker 1, Speaker 2's reply:
      A) is true.
      B) is not true.
      C) could be true.
      D) I don't know/I'm not sure.
      E) Other: _____

7) Given the question by Speaker 1, the amount of information given in Speaker 2's reply is:
      A) too little.
      B) appropriate.
      C) too much.
      D) I don't know/I'm not sure.
      E) Other: _____

8) Given the question by Speaker 1, the information given in Speaker 2's reply is:
      A) relevant.
      B) irrelevant.
      C) I don't know/I'm not sure.
      D) Other: _____

9) Given the question by Speaker 1, Speaker 2's reply is:
      A) stated in clear, simple wording.
      B) not stated in clear, simple wording.
      C) I don't know/I'm not sure.
      D) Other: _____

10) Given the question by Speaker 1, Speaker 2's reply:
      A) is easy to understand.
      B) could cause confusion in the conversation.
      C) I don't know/I'm not sure.
      D) Other: _____

SEGMENT 1

Context: two classmates meeting each other for the first time before class starts on the first day of Calculus
Dialogue:

> *Speaker 1: So, do you like math?*
>
> *Speaker 2: Does the sun rise in the east?*

1) Did you understand the conversation? Circle one.
    A) Yes.
    B) No.
    C) I'm not sure.

2a) If you had to explain to a friend what Speaker 2 means in this conversation, what would you say?

2b) Why do you think this is so? What are you thinking about when you explain it this way?

3a) If you could recommend a way for Speaker 2 to respond to Speaker 1 here, what would you say?

> *Speaker 1: So, do you like math?*
> *Speaker 2: "*_____

_____ *."*

3b) Why do you think this? What are you thinking about when you recommend this?

4) What do you think was the intended meaning of Speaker 1's question? Circle one.
     A) "Please ask me a question about solar movements."
     B) "What do you like to do outside class?"
     C) "Do you like math?"
     D) I don't know/I'm not sure.
     E) Other: _____

5) What do you think was the intended meaning of Speaker 2's reply? Circle one.
     A) "Where does the sun rise?"
     B) "Of course I like math!
     C) "No, I do not like math."
     D) I don't know/I'm not sure.
     E) Other: _____

6) Given the question by Speaker 1, Speaker 2's reply:
     A) is true.
     B) is not true.
     C) could be true.
     D) I don't know/I'm not sure.
     E) Other: _____

7) Given the question by Speaker 1, the amount of information given in Speaker 2's reply is:
     A) too little.
     B) appropriate.
     C) too much.
     D) I don't know/I'm not sure.
     E) Other: _____

8) Given the question by Speaker 1, the information given in Speaker 2's reply is:
     A) relevant.
     B) irrelevant.
     C) I don't know/I'm not sure.
     D) Other: _____

9) Given the question by Speaker 1, Speaker 2's reply is:
     A) stated in clear, simple wording.
     B) not stated in clear, simple wording.
     C) I don't know/I'm not sure.
     D) Other: _____

10) Given the question by Speaker 1, Speaker 2's reply:
     A) is easy to understand.
     B) could cause confusion in the conversation.
     C) I don't know/I'm not sure.
     D) Other: _____

SEGMENT 2

Context: two students who have the same tastes academically and often plan their schedules and study together are conversing about Speaker 2's favorite class

Dialogue:
> *Speaker 1: I'm thinking about taking Professor West's class next semester. I know that's your favorite and you're always recommending it to me, but I just want to check one last time… Should I take it?*
> *Speaker 2: Oh, no way! It was absolutely the worst! You'll just hate it.*

1) Did you understand the conversation? Circle one.
   A) Yes.
   B) No.
   C) I'm not sure.

2a) If you had to explain to a friend what Speaker 2 means in this conversation, what would you say?

2b) Why do you think this is so? What are you thinking about when you explain it this way?

3a) If you could recommend a way for Speaker 2 to respond to Speaker 1 here, what would you say?

> *Speaker 1: … Should I take it?*
> *Speaker 2: "_____*

_____.*"*

3b) Why do you think this? What are you thinking about when you recommend this?

4) What do you think was the intended meaning of Speaker 1's question? Circle one.

      A) "Is the class easy?"
      B) "Do you recommend the class for me next semester?"
      C) I don't know/I'm not sure.
      D) Other: _____

5) What do you think was the intended meaning of Speaker 2's reply? Circle one.

      A) "It was terrible; it's not recommended."
      B) "Of course you should take it! You shouldn't have to ask by now!"
      C) I don't know/I'm not sure.
      D) Other: _____

6) Given the question by Speaker 1, Speaker 2's reply:

      A) is true.
      B) is not true.
      C) could be true.
      D) I don't know/I'm not sure.
      E) Other: _____

7) Given the question by Speaker 1, the amount of information given in Speaker 2's reply is:

      A) too little.
      B) appropriate.
      C) too much.
      D) I don't know/I'm not sure.
      E) Other: _____

8) Given the question by Speaker 1, the information given in Speaker 2's reply is:

      A) relevant.
      B) irrelevant.
      C) I don't know/I'm not sure.
      D) Other: _____

9) Given the question by Speaker 1, Speaker 2's reply is:

      A) stated in clear, simple wording.
      B) not stated in clear, simple wording.
      C) I don't know/I'm not sure.
      D) Other: _____

10) Given the question by Speaker 1, Speaker 2's reply:

      A) is easy to understand.
      B) could cause confusion in the conversation.
      C) I don't know/I'm not sure.
      D) Other: _____

SEGMENT 3

Context: two students at the library during the course registration period

Dialogue:

Speaker *1: Hey, I just registered! I can't wait to take the courses I got! What's your schedule for next semester?*

Speaker 2: My schedule? Well, hmmm, let's see… For me to tell you my schedule for next semester, I'm going to have to finish this English essay, read two chapters of my psychology textbook, go to the geography computer lab so I can re-make my map for class that got erased last night when the power went out, oh and I suppose I should find some time somewhere in there to eat some food, sleep a few hours at night, and actually go to class… then, yes, I should be able to sit down in front of Oasis to browse the course listings, ask people for recommendations, go meet with my advisor to get clearance, and then, finally, log back in to Oasis to register for next semester's classes… and immediately make sure that I find you so we can share schedules… Okay?

1) Did you understand the conversation? Circle one.
  A) Yes.
  B) No
  C) I'm not sure.

2a) If you had to explain to a friend what Speaker 2 means in this conversation, what would you say?

2b) Why do you think this is so? What are you thinking about when you explain it this way?

3a) If you could recommend a way for Speaker 2 to respond to Speaker 1 here, what would you say?

  Speaker 1: … What's your schedule for next semester?
  Speaker 2: "_____

  _____."

3b) Why do you think this? What are you thinking about when you recommend this?

4) What do you think was the intended meaning of Speaker 1's question? Circle one.
      A) "Can we take all of our classes together?"
      B) "Please tell me lots of information about your registration experience; I want to know everything."
      C) "What is your schedule next semester?"
      D) I don't know/I'm not sure.
      E) Other: _____

5) What do you think was the intended meaning of Speaker 2's reply? Circle one.
      A) "Leave me alone! I'm too busy and stressed right now to be bothered about schedules for next term."
      B) "My schedule next semester is great. Thanks for asking!"
      C) I don't know/I'm not sure.
      D) Other: _____

6) Given the question by Speaker 1, Speaker 2's reply:
      A) is true.
      B) is not true.
      C) could be true.
      D) I don't know/I'm not sure.
      E) Other: _____

7) Given the question by Speaker 1, the amount of information given in Speaker 2's reply is:
      A) too little.
      B) the right amount.
      C) too much.
      D) I don't know/I'm not sure.
      E) Other: _____

8) Given the question by Speaker 1, the information given in Speaker 2's reply is:
      A) relevant.
      B) irrelevant.
      C) I don't know/I'm not sure.
      D) Other: _____

9) Given the question by Speaker 1, Speaker 2's reply is:
      A) stated in clear, simple wording.
      B) not stated in clear, simple wording.
      C) I don't know/I'm not sure.
      D) Other: _____

10) Given the question by Speaker 1, Speaker 2's reply:
      A) is easy to understand.
      B) could cause confusion in the conversation.
      C) I don't know/I'm not sure.
      D) Other: _____

Segment 4

Context: **two classmates before a big exam**

Dialogue:

Speaker 1: Hey! I heard you started a group study session for Biology last night. That's so nice of you! I bet it was a lot of work for you to prepare to lead the group. How did it go?

Speaker 2: The other individual persons who committed to attend the session of examination review ultimately proved absent.

1) Did you understand the conversation? Circle one.
    A) Yes.
    B) No.
    C) I'm not sure.

2a) If you had to explain to a friend what Speaker 2 means in this conversation, what would you say?

2b) Why do you think this is so? What are you thinking about when you explain it this way?

3a) If you could recommend a way for Speaker 2 to respond to Speaker 1 here, what would you say?

Speaker 1: ... How did it go?
Speaker 2: "_____

_____ ."

3b) Why do you think this? What are you thinking about when you recommend this?

4) What do you think was the intended meaning of Speaker 1's question? Circle one.
      A) "Please tell me about the study session."
      B) "How many people came to your study group?"
      C) I don't know/I'm not sure.
      D) Other: _____

5) What do you think was the intended meaning of Speaker 2's reply? Circle one.
      A) "I'm very disappointed in the people who stood me up."
      B) "It was fantastic! I can't wait to do it again next week."
      C) I don't know/I'm not sure.
      D) Other: _____

6) Given the question by Speaker 1, Speaker 2's reply:
      A) is true.
      B) is not true.
      C) could be true.
      D) I don't know/I'm not sure.
      E) Other: _____

7) Given the question by Speaker 1, the amount of information given in Speaker 2's reply is:
      A) too little.
      B) the right amount.
      C) too much.
      D) I don't know/I'm not sure.
      E) Other: _____

8) Given the question by Speaker 1, the information given in Speaker 2's reply is:
      A) relevant.
      B) irrelevant.
      C) I don't know/I'm not sure.
      D) Other: _____

9) Given the question by Speaker 1, Speaker 2's reply is:
      A) stated in clear, simple wording.
      B) not stated in clear, simple wording.
      C) I don't know/I'm not sure.
      D) Other: _____

10) Given the question by Speaker 1, Speaker 2's reply:
      A) is easy to understand.
      B) could cause confusion in the conversation.
      C) I don't know/I'm not sure.
      D) Other: _____

SEGMENT 5
Context: two students on the first day of the semester

Dialogue:
> *Speaker 1: Wow! Hi again! We were just in math and biology together, and now English here! It seems like we're taking all the same classes this semester. Maybe we should be study buddies?*
>
> *Speaker 2: Okay that sounds good! We should get each other's phone number; here's mine…*

1) Did you understand the conversation? Circle one.
  A) Yes.
  B) No.
  C) I'm not sure.

2a) If you had to explain to a friend what Speaker 2 means in this conversation, what would you say?

2b) Why do you think this is so? What are you thinking about when you explain it this way?

3a) If you could recommend a way for Speaker 2 to respond to Speaker 1 here, what would you say?

> *Speaker 1: … Maybe we should be study buddies?*
> *Speaker 2: "_____*
>
> _____ ."

3b) Why do you think this? What are you thinking about when you recommend this?

4) What do you think was the intended meaning of Speaker 1's question? Circle one.
      A) "Why do you keep following me?"
      B) "Would you like to be study buddies?"
      C) I don't know/I'm not sure.
      D) Other: _____

5) What do you think was the intended meaning of Speaker 2's reply? Circle one.
      A) "I think being study buddies is a good idea."
      B) "I think you should change your course schedule. I never want to see you again."
      C) I don't know/I'm not sure.
      D) Other: _____

6) Given the question by Speaker 1, Speaker 2's reply:
      A) is true.
      B) is not true.
      C) could be true.
      D) I don't know/I'm not sure.
      E) Other: _____

7) Given the question by Speaker 1, the amount of information given in Speaker 2's reply is:
      A) too little.
      B) the right amount.
      C) too much.
      D) I don't know/I'm not sure.
      E) Other: _____

8) Given the question by Speaker 1, the information given in Speaker 2's reply is:
      A) relevant.
      B) irrelevant.
      C) I don't know/I'm not sure.
      D) Other: _____

9) Given the question by Speaker 1, Speaker 2's reply is:
      A) stated in clear, simple wording.
      B) not stated in clear, simple wording.
      C) I don't know/I'm not sure.
      D) Other: _____

10) Given the question by Speaker 1, Speaker 2's reply:
      A) is easy to understand.
      B) could cause confusion in the conversation.
      C) I don't know/I'm not sure.
      D) Other: _____

ADDENDUM (IMPORTANT: THE ADDENDUM REFERS ONLY TO SEGMENTS 1-4)

1) How difficult do you think it is to understand Speaker 2's intended meaning?

Very Easy	Somewhat Easy	Average	Somewhat Difficult	Very Difficult
1	2	3	4	5

2) How often do you think English speakers use language like Speaker 2 did?

Very Infrequently / Somewhat Infrequently / Average / Somewhat Frequently / Very Frequently

1	2	3	4	5

3) How often do you think people around the world use language like Speaker 2 did?

Very Infrequently / Somewhat Infrequently / Average / Somewhat Frequently / Very Frequently

1	2	3	4	5

4) How often do you use English like Speaker 2 did?

Very Infrequently / Somewhat Infrequently / Average / Somewhat Frequently / Very Frequently

1	2	3	4	5

5) How often do you use any language like Speaker 2 did?

Very Infrequently / Somewhat Infrequently / Average / Somewhat Frequently / Very Frequently

1	2	3	4	5