THE PRAGMATICS AND INTONATION OF MA-PARTICLE QUESTIONS IN MANDARIN

A Thesis

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By

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* * * * *

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This thesis investigated the pragmatics and intonation of ma-particle questions in Mandarin Chinese. By considering the pragmatic implications of ma-particle questions in differing contexts, we find that in discourse positive ma-particle questions can be either neutral or non-neutral and that the polarity and degree of non-neutrality can vary. The non-neutral ma-particle questions can have pragmatic interpretations such as 'incredulity', 'denial', 'confirmation-soliciting', 'accusation,' and so on.

To understand how the pragmatic meanings of ma-particle questions are manifested in discourse, this study investigated the F0 contours for ma-particle questions uttered in various contexts. The experimental results of this study suggest that the intonation is manipulated to signal the neutrality or type of non-neutrality of ma-particle questions. We observe that the localized effects of boundary tones and focus-related prosodic prominence interact with the more global manipulations of intonation, such as a different gradience of the general trend of the backdrop pitch and global pitch range expansion.

The findings of this study clarify the relationship between the pragmatics and prosodic manipulations of ma-particle questions in discourse. Furthermore, the present
study suggests a new approach to investigating the pragmatics of sentence-final particles and their interaction with intonation in Mandarin Chinese.
To Dong Wook Lee
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<td>Classifier</td>
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<tr>
<td>PL</td>
<td>Plural</td>
</tr>
<tr>
<td>PRT</td>
<td>Particle</td>
</tr>
<tr>
<td>VP</td>
<td>Verb Phrase</td>
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CHAPTER 1

INTRODUCTION

This thesis investigates *ma*-particle questions in Mandarin Chinese. It looks at their pragmatics and the interaction of the various pragmatic interpretations with prosodic manipulations, with Chapter 1 addressing the topic and methodology of this research. The prosodic system and the categorization of yes-no questions in Mandarin will also be reviewed, to provide a better understanding of the discussion in subsequent chapters. Finally, an overview of the organization of this study is provided.

1.1 Topic of Research

Like other varieties of Chinese, Mandarin Chinese has sentence final particles that add grammatical information and modality to an utterance. Much research has been done on the implications contributed by each sentence final particle and on the possible core meaning underlying its diverse functions (Li and Thompson 1981, Liu et al. 1983, Chu 1998). Linguists once assumed that because tone languages such as Chinese make use of sentence final particles for functions that are often provided by intonation in English and some other non-tonal languages, Mandarin Chinese lacks
intonation. However, as Chao (1933a) convincingly argues, Mandarin does have intonation, even if not the rich inventory of intonational patterns that one finds in English. This reduced repertoire of intonational morphemes in Mandarin Chinese is largely compensated for by the sentence final particles. In the decades since Chao’s article appeared, despite a fairly extensive literature on the intonation of Mandarin -- especially in relation to the interaction of tone and intonation -- there has been little research on the pragmatic functions of Mandarin’s sentence final particles and their relation to intonation.

Amongst the sentence final particles in Mandarin Chinese, the particle *ma* has been considered the least controversial, owing to its prominent syntactic function as a question marker for yes-no questions: a declarative sentence can be made an interrogative sentence by adding to it the *ma*-particle. Take, for an example, the pair of sentences in (1):  

(1) a. *Ni3 he1 niu2 nai3*.  
   You drink milk  
   “You drink milk.”

---

1 The examples in Chinese are romanized using the Hanyu Pinyin romanization system, except that the four lexical tones are indicated numerically as ‘1’ through ‘4’, with the ‘neutral tone’ designated by ‘0’ (zero). That is, the lexical tones are referred to as Tone 1, Tone 2, Tone 3, and Tone 4; the neutral tone is Tone 0. Tone contours are here noted as needed. A brief description of the tones in Mandarin is provided in section 1.3.1.
b. Ni3  he1  niu2 nai3 ma0?
   you drink  milk  PRT
   “Do you drink milk?”

Though the function of the ma-particle may at first glance seem straightforward, its use bears pragmatic implications. In particular, discussion has centered on the ‘neutrality/non-neutrality’ inherent in the ma-particle questions. Chao (1968) observes, for example, that the ma-particle questions tend to differ from A-not-A questions in terms of their signaling a speaker’s assumptions in the discourse. According to Chao, an A-not-A question as in (2) truly seeks new information as a yes-no question. By contrast, the ma-particle question as in (1b) can imply that the speaker expects the answer to be ‘no’.

(2)  Ni3  he1  bu4 he1  niu2 nai3?
   you  drink  not  drink  milk
   “Do you drink milk?”

There is much argument concerning the non-neutrality of ma-particle questions, including the argument for non-neutrality as intrinsic to the ma-particle question (Chao 1968, Tang 1986, Chu 1998) and the argument for the relation between syntactic form and non-neutrality of the ma-particle question (Lyu, 1980, Lin, 1981, Li and Thompson 1981, Liu et al. 1983, McGinnis 1990, etc.). The non-
neutrality of the *ma*-particle question and the factors that trigger it still are not well understood, due largely to methodological problems in the early research. In the first place, the syntactic influence on the semantic and pragmatic implications of *ma*-particle questions was misunderstood to be an inherent feature of the *ma*-particle question per se. Secondly, too little attention was paid to the contexts in which such questions are uttered. Only “out of the blue” *ma*-particle questions were considered. As a result, the pragmatic meanings of *ma*-particle questions that they might interact with their context have been less than fully understood. Thirdly, with so few studies on the interaction between sentence final particles and intonation, the *ma*-particle question was rarely considered with reference to intonational manipulations in the utterance. Fourth and last, the early studies on prosodic manipulations related to the non-neutrality of the *ma*-particle question tend all too often to rely upon impressionistic observations rather than upon a consideration of solid, experimental data.

The main goal of this study, then, is to examine the pragmatics of the *ma*-particle question and its interaction with prosodic manipulations. To achieve this goal, the prosodic factors that invoke the pragmatic meanings of the *ma*-particle question in discourse are investigated. Consequently, all data are considered in specific contexts. Given our limited understanding of the relationship between prosody and pragmatics of *ma*-particle questions, other important issues -- e.g., the influence of syntactic structures and focusing adverbs on pragmatic implications and their interaction with prosody -- must await future investigation.
1.2 Research Methodology

in order to capture the ways in which ma-particle questions function in discourse, this study adopts a pragmatics-oriented approach. It is assumed that the text of the utterance, a string of lexical items in a well-formed syntactic structure, can in discourse have differing pragmatic interpretations. More importantly, the pragmatic implication of the utterance is invoked by a certain association of the text of the utterance with the intonation and the prosodic prominence structures (Jackendoff 1972, Rooth 1985, Ladd 1996, Kadman, forthcoming). If the text is not aligned with the proper type of prosody, the utterance becomes infelicitous in discourse regardless of its grammaticality. The question-answer pairs in (3) show how the pragmatic implication of the utterance Li3 Li4 nian4 ri4 wen2 shu1 “Li Li reads Japanese books” is realized by the association of prosodic prominence with the utterance. In the pairs in (3), the prosodic prominence should be on the object in order for the utterance B to be an adequate answer to the question A. Therefore, the pair in (3a) is felicitous while one in (3b) is not. (Text in bold capital letters indicates prosodic prominence.)

(3)  a. A: (What does Li Li read?)

B: *Li3 Li4 nian4 RI4 WEN2 SHU1*

Li Li reads *JAPANESE BOOKS.*
b. A: (What does Li Li read?)

B: LI3 LI4 nian4 ri4 wen2 shu1

LI LI reads Japanese books.

The simple question-answer congruence test in (3) shows that prosodic prominence on a certain constituent in the utterance defines felicity of the utterance under a given context. Therefore we can say that it is the prosodic prominence that brings the pragmatic meaning into discourse, and that it is this interaction between syntactic surface structure and prosody which disambiguates potentially ambiguous textual meanings.

The pragmatic meanings of ma-particle questions in discourse can be understood by exploring the relationship between the text of the ma-particle question and the prosody. This study will try to determine which prosodic elements play a role in determining the pragmatic functions of ma-particle questions. Since fundamental frequency is known to play a crucial role in tonal realization, intonation, and focus (Shih 1988, Shen 1990, Jin 1996, Xu 1999), the F0 patterns of ma-particle questions are examined in this thesis in order to determine the effect of prosodic manipulations on the pragmatic meanings of ma-particle questions (Chapter 3). Some background for this study is provided in the two subsections that follow, with section 1.3 providing an introduction to the tones in Mandarin, and section 1.4 covering yes-no questions in Mandarin Chinese.
1.3 Tones in Mandarin Chinese

The several subsections in 1.3 provide background information on the prosodic system of Mandarin Chinese. Section 1.3.1 describes the lexical tones and the sandhi tones. Section 1.3.2 discusses the 'boundary tones' as prosodic elements at a higher level. The effects of prosodic prominence on the tones are presented in section 1.3.3.

1.3.1 Lexical Tones and Sandhi Tones

Standard Mandarin Chinese is generally described as having four phonemically-contrasting tones and a neutral tone.\(^2\) Following Chao (1930, 1933a, 1968), the tone shapes in citation forms and their pitch value in his five-level numerical scale are presented in Table 1.1.

\(^2\) Because the particles and some bound morphemes are inherently toneless, they are specified to be in the 'neutral tone'.
<table>
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<th>Tone shape</th>
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</tr>
<tr>
<td>Tone 2</td>
<td>High-rising</td>
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</tr>
<tr>
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<td>Low-dipping</td>
<td>214⁴</td>
</tr>
<tr>
<td>Tone 4</td>
<td>High-falling</td>
<td>51</td>
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Table 1.1 Tone shapes and pitch value in Mandarin Chinese

Among the four lexical tones, the tonal realization of Tone 3 is known to vary according to the tone of the following syllable. When Tone 3 directly precedes Tone 1, Tone 2, or Tone 4, it is realized as low-falling, ‘21’ in Chao’s numerical scale. When Tone 3 precedes another Tone 3, it becomes Tone 2. In addition, there are other tone alternations that Chao (1968:44) describes as “morphophonemic tone sandhi,” including morphemes such as *yīl* ‘one’ and *bu4* ‘not,’ where the Tone 1 of *yīl* and Tone 4 of *bu4* are changed into Tone 2 when they precede Tone 4.

---

³ In the numerical scale in Table 1.1, the number 5 indicates the highest pitch value, and the number 1 represents the lowest pitch value within a speaker’s pitch range.

⁴ Since Tone 3 is realized as a low-dipping tone only in citation form and in the final position of some utterances, its underlying form has been treated as ‘low’ or ‘low falling’ in the literature (Kratochvil 1968, Shih 1988, Liao 1990, Jin 1994, Peng et al. submitted).
1.3.2 Boundary Tones

In addition to the tones just discussed, Chao (1968) also observes two types of intonational endings for phrases and sentences in Beijing speech: a Rising Ending and a Falling Ending. According to Chao, the intonation of short declarative sentences is basically the succession of lexical tones with slight falling pitch toward the end.\(^5\) By contrast, rising pitch is realized at the end of some types of questions such as particle questions. This study adopts Chao's two kinds of ending patterns and refers to them as 'high boundary tone' and 'low boundary tone'.\(^6\) Therefore, it is assumed that at least two kinds of boundary tones function as higher-level prosodic elements in Mandarin.

For Chao, an additional pitch is realized only on the voiced portion of the last syllable of an utterance. Furthermore, he treats both Rising Ending and Falling Ending as sentence final particles. However, more research needs to be done to understand the domains and the effects of boundary tones in Mandarin. This issue is discussed in Chapter 3.

---

\(^5\) With the metaphor of small ripples riding on large waves, Chao states that lexical tones are realized on the intonational pattern. According to him, the actual pitch movement of speech in Chinese is the 'algebraic sum of tone and intonation' (1933b:53, 1968:39). His observation on the invariability of tonal shapes in different intonational contexts is supported by many experimental studies (e.g., Ho 1979, Gårding 1987, Shen 1990).

\(^6\) The terms 'high boundary tone' and 'low boundary tone' are borrowed from M_ToBI. M_ToBI (Mandarin Tones and Break Indices) is the framework for annotating the prosodic system of Mandarin (Peng et al., submitted).
1.3.3 Prosodic Prominence

Recent experimental studies (Shih 1988, Jin 1996) show that prosodic prominence is realized as expanded pitch range in Mandarin. According to Shih (1988: 93-94), when the pitch range is expanded, a high tonal target becomes much higher while a low tonal target remains at the same level or is slightly lower. In the case of post-focused syllables, Jin demonstrates that the pitch range of weakly stressed syllables is considerably reduced. Figures 1.1 and 1.2 show respectively a broad focused utterance and a narrow focused one.
Figure 1.1. Broad focused utterance: *Yu2 Li4 nian4 ri4wen2 shul*. "Yu Li reads Japanese books."
Figure 1.2. Utterance with narrow focus on verb: *Yu2 Li4 NIAN4 ri4wen2 shu1*. "Yu Li *READS* Japanese books."

The broad focused utterance in Figure 1.1 shows that the high pitch targets (on *Li4, nian4, ri4* and *shu1*) become successively lower because of the downstepping effect. By contrast, in Figure 1.2, the pitch range is dramatically expanded on the prosodically-prominent syllable, *nian4* 'read', with the pitch range on the following syllables noticeably compressed. In other words, because of pitch compression, the falling pitch, once begun on the syllable, *nian4*, continues to a very low pitch on the
syllable wen2, whose rising tone is then not fully realized. (The F0 contour of the last syllable, shu4, is not visible because of devoicing of the vowel.)

1.4 Yes-No Questions in Mandarin Chinese

Yes-no questions are questions that allow two alternative answers: a positive affirmation of the proposition and a negative denial of it. In Mandarin, it is generally accepted that both the A-not-A question and the ma-particle question are the main types of yes-no questions. This study includes the echo-question as a third type of yes-no question. Since the echo-question is converted from its corresponding declarative sentence via certain prosodic manipulations, it is treated as a syntactically-unmarked yes-no question.

Excluded from the category of yes-no questions in this study are so-called “tag questions” that contain the A-not-A structure. In spite of their syntactic similarity to A-not-A questions, the tag question is not a yes-no question because it is inherently rhetorical.\(^7\) For example, the tag question in (7) seeks confirmation by supplying the speaker’s presupposition from the outset.

\[(7) \quad Ni3\ s\i\i4\ xue2sheng0,\ dui4\ bu4\ dui4?\]

you be student right not right

“You are a student, aren’t you?”

\(^7\) For discussion on the rhetorical usage of a tag question, see Li and Thompson (1981: 546).
A more important reason for excluding tag questions is that this study investigates prosodic manipulation at the utterance level, while not restricting such manipulation to the final clause containing the tag question. The main focus is on the functions and the intonation of ma-particle questions; for comparative purposes, this study also looks at the other two types of yes-no questions, the A-not-A question and the echo question.

1.5 Organization of the Thesis

This thesis consists of four chapters whose organization is as follows. Following this first chapter, Chapter 2 reviews and discusses earlier studies on pragmatic implications and on intonation patterns of ma-particle questions. The first half of Chapter 2 covers studies on the pragmatics of ma-particle questions. There, the discussions on the neutrality and non-neutrality of ma-particle questions are introduced together with reference to the A-not-A question. Following this, the early studies on the relationship between non-neutrality and syntactic forms of ma-particle questions are discussed. Finally, we discuss the pragmatic implications of ma-particle questions that were poorly understood in earlier syntax-oriented studies.

The second half of Chapter 2 reviews the issue of intonation patterns of ma-particle questions and the relationship between intonation patterns and modality in ma-particle questions. To help understand the prosodic manipulations involved in non-neutral ma-particle questions, we have highlighted some studies on manipulations of the ending pitch and of prosodic prominence.
Chapter 3 presents the experimental research conducted for this study. Based on the relevant F0 parameters, the neutral ma-particle questions and non-neutral ma-particle questions are compared with other types of utterances, namely, declarative sentences, A-not-A questions, and echo-questions. The results of this study suggest that the intonation is manipulated to signal the neutrality -- or the type of non-neutrality -- of ma-particle questions. Localized effects of boundary tones and focus-related prosodic prominence interact with the more global manipulations of intonation, such as expanded pitch range and a general rising trend of the intonation.

Chapter 4 summarizes the findings of this study and includes a brief discussion of some questions and issues for future research.
CHAPTER 2

DISCUSSION OF EARLY STUDIES

This chapter reviews and discusses the pragmatic functions and the intonation patterns of *ma*-particle questions. In section 2.1, the early studies on non-neutrality of *ma*-particle questions will be reviewed, and the pragmatic meanings of *ma*-particle questions that have not been fully understood by early syntax-oriented studies will be discussed. In section 2.2, the prosodic studies on *ma*-particle questions will be introduced. Also, the interaction between intonational manipulations and non-neutrality of *ma*-particle questions will be discussed.

2.1 Pragmatic Studies on Ma-Particle Questions

Much discussion on pragmatic functions of *ma*-particle questions has been with reference to A-not-A questions (Elliot 1965, Chao 1968, Hashimoto 1971, Li and Thompson 1981, McGinnis 1990, Chu 1998, etc). Therefore, section 2.1.1 will review the literature on the comparative research of *ma*-particle questions and A-not-A questions. In section 2.1.2, the controversial issues on the functions of *ma*-particle questions will be addressed in relation to syntactic forms. How we capture the
pragmatic implications of *ma*-particle questions in discourse will be discussed in section 2.1.3.

2.1.1 Functional Difference Between A-not-A Questions and *Ma*-Particle Questions

Pragmatic studies on the functions of *ma*-particle questions began with Chao’s (1968) observation that *ma*-particle questions imply an assumption about the likely response. That is, they elicit a confirmation (assumed ‘right’) or a denial (assumed ‘no’) rather than genuinely seek information. He also points out that they thus contrast with A-not-A questions in not being genuinely neutral yes-no questions. Therefore, the two yes-no questions in (1) can have different implications. (The example in (1a) is from Chao (1968:800)

(1)  a. *Ni3 pa4 feng1 bu4 pa4?*

    you be-fear-of wind not be-fear-of

    “Are you afraid of wind?”

---

8 There have been studies that claim the semantic or syntactic similarity between the *ma*-particle question and the A-not-A question. Elliot (1965) and Rygaloff (1973) stand in contrast to Chao (1968) by claiming that the A-not-A question and the *ma*-particle question are semantically equivalent. With respect to syntactic features, Huang (1986) claims that the two types of questions are syntactically related in that the *ma*-particle question structurally originated from the A-not-A question. His argument is based on historical evidence from vernacular literature in Northern China.
b. *Ni3 pa4 feng1 ma0?*

you be-afraid-of wind PRT

"Are you afraid of wind?"

According to Chao, the chance of a positive or a negative answer to the A-not-A question in (1a) is 50:50. However, when the *ma*-particle question in (1b) is uttered, the answer is very likely to be negative. Since Chao’s observation, there has been a high degree of agreement upon the different pragmatic functions of the two types of yes-no question: neutrality vs. non-neutrality. In particular, it has been generally agreed that the negative form of *ma*-particle question presupposes the affirmative form of the corresponding statement as an answer, as in (2), which is from Chao (1968:800).

(2) *Ni3 bu4 pa4 lao3hu3 ma0?*

you not be-afraid-of tiger PRT

"Aren’t you afraid of tigers?"

According to Chao, when a speaker asks the negative *ma*-particle question in (2), his or her assumption is that a hearer is afraid of tigers. Chao’s view on the presupposition of negative *ma*-particle questions has been extensively supported by later studies (Lyu 1980, Liu et al. 1983, Hu 1991, Fang 1992, Chiu 1998, inter alia). Furthermore, the rhetorical use of negative *ma*-particle questions to express a
speaker's impatience or to blame a hearer has also been pointed out (Liu et al. 1983, Hu 1991, Fang 1992).

2.1.2 Syntactic Forms and Non-Neutrality of Ma-Particle Questions

In spite of general agreement on the non-neutrality of negative ma-particle questions, there has been considerable disagreement on the non-neutrality of affirmative ma-particle questions. Much discussion has focused on the relationship between syntactic form and non-neutrality. There are four main viewpoints to be mentioned.

First, it has been argued that there is no relationship between the syntactic form and non-neutrality. According to Chao (1968), Tang (1986, cited in McGinnis 1990: 34-5), Fang (1992) and Chu (1998), positive ma-particle questions are also inherently non-neutral. Therefore, like the rhetorical usage of negative ma-particle questions, positive ma-particle questions contain slight doubt, or considerable doubt, about an affirmative answer, implying a probability of less than 50% (Chao 1968:800). Therefore, for Chao and scholars sharing this view, the ma-particle question is a non-neutral yes-no question.⁹

Second, McGinnis (1990) claims that non-neutrality is not related to the syntactic form in that both negative and affirmative forms can be either neutral or non-

⁹ Chu (1998:122-23) explains the non-neutrality of ma-particle questions in a compromising way. According to her, although ma-particle questions bring in a weak negative assumption that is contrary to the proposition in the corresponding statement, the assumption is so weak as to be absorbed by a neutral context.
neutral. According to him, the negative interrogative structures do not present a significantly higher percentage of strongly question-posing discourse organizations than positive interrogative forms, or interrogatives in general.\(^{10}\)

Third, it has been claimed that non-neutrality is entirely determined by the syntactic form of *ma*-particle questions (Elliott 1965:33-39, Hashimoto (1971:110-111, cited in McGinnis 1990:25-6). According to this view, only negative *ma*-particle questions deliver a speaker’s presupposition while positive forms of *ma*-particle questions are semantically equivalent to A-not-A questions.\(^{11}\) In this regard, although Lin (1982:43-44) acknowledges the non-neutrality of negative *ma*-particle questions, she limits the rhetorical usage to certain types of syntactic structure such as *bu2shi4...ma0?* “Isn’t it...?” and *nan2dao4...bu4 + Verb ma0?* “Do you really mean that...do(es) not...?”.\(^{12}\)

Lastly, it has been argued that while negative *ma*-particle questions are inclined to bring in a speaker’s presupposition, positive *ma*-particle questions can be used in either a neutral or a non-neutral context (Lyu 1980, Liu et al. 1983). According to this position, unlike negative *ma*-particle questions that are inherently non-neutral, positive *ma*-particle questions can be uttered as either neutral yes-no questions or

\(^{10}\) Based on data from modern Taiwan drama and Chinese language textbooks, McGinnis (1990) tested the neutrality or non-neutrality of *ma*-particle questions by a question asking/posing scale from Lyons (1977). According to him, question asking and question posing can be identified by such factors as a pause following a question, speaker’s responding to his or her own questions, and listener’s failure to respond verbally.

\(^{11}\) With regard to the type of the presumption implied in negative *ma*-particle questions, contrary to Chao (1968), Elliott (1965) and Hashimoto (1971) argue that the statement left when the *ma*-particle is removed corresponds to a speaker’s presupposition. Therefore, when a speaker asks the question in (2), it is presupposed that the hearer is *not* afraid of tigers.

\(^{12}\) Lin (1985) categorizes the negative *ma*-particle questions with these structures as a separate interrogative type, ‘rhetorical question’ in her term. However, she is not explicit on how non-neutrality is triggered in these specific syntactic constructions.
rhetorical questions to express a certain modality. The studies on the relationship between syntactic form and non-neutrality of *ma*-particle questions can be summarized in Table 2.1.

<table>
<thead>
<tr>
<th>No relationship between syntactic form and non-neutrality</th>
<th>Negative <em>ma</em>-particle questions</th>
<th>Positive <em>ma</em>-particle questions</th>
<th>Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-neutral</td>
<td></td>
<td>Chao (1968)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Tang (1986)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fang (1992)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chu (1998)</td>
<td></td>
</tr>
<tr>
<td>Either non-neutral or neutral</td>
<td></td>
<td>McGinnis (1990)</td>
<td></td>
</tr>
<tr>
<td>Relationship between syntactic form and non-neutrality</td>
<td>Non-neutral</td>
<td>Elliott (1965)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Neutral</td>
<td>Hashimoto (1971)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Lin (1985))</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non-neutral</td>
<td>Lyu (1980),</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Either non-neutral or neutral</td>
<td>Liu et al. (1983)</td>
<td></td>
</tr>
</tbody>
</table>

Table 2.1 Studies on syntactic forms and non-neutrality of *ma*-particle questions

As Table 2.1 shows, despite much discussion on non-neutrality of *ma*-particle questions and on the relationship between non-neutrality and syntactic structure, there is still much controversy over the pragmatic functions of positive *ma*-particle questions. Note that in all these studies, the attempt is to generalize some feature
inherent to the *ma*-particle without considering the other factors that might trigger non-neutrality. Three major problems are involved.

First, the effect of certain syntactic constructions or adverbs on the meaning of the utterance has been treated as an inherent feature of *ma*-particle questions.\(^\text{13}\) For instance, consider the *ma*-particle question in (3). This is illustrated as an example to show non-neutrality of positive *ma*-particle questions in Chao (1968:800).

(3)  \textit{Ni3 hai2 da3 suan4 chui qu4 ma0?}

\begin{tabular}{ll}
you & still \\
plan & go-out \\
PRT &
\end{tabular}

"Are you still planning to go out?"

With this utterance, Chao argues that the positive *ma*-particle question is inherently non-neutral, since a speaker expects a negative answer from a hearer. However, he overlooked the presuppositional meaning that the adverb *hai2* ‘still, even’ brings with it. Consider another example given in (4). This example is one of the utterances listed to show the type of presupposition implied by positive *ma*-particle questions in Liu et al. (1983:283). According to them, when a positive *ma*-particle question is rhetorical, it always implies a negative presupposition.

\(^{13}\) The misunderstanding of implications of certain grammatical structures or lexical items as the feature of sentence-final particles in Chao (1968) has been addressed in Li and Thompson (1981:238-318).
(4)  ni3 kan4, zhe4 hai2 xiang4 ge0 xue2 sheng1 ma0?

you look this still be-like CL student PRT

"You take a look! Does this even look like (that of) a student (e.g., in dress)?"

In Liu et al., the functions of the preceding short imperative sentence and the
adverb hai2 ‘still, even’ were ignored. And the negative assumption of this utterance
was attributed solely to the ma-particle. That is, the force of ‘rhetorical question’ was
treated as a property inherent in ma-particle questions.

Second, little attention has been paid to the pragmatic implications of ma-
particle questions in discourse. Hence, the presupposition of ma-particle questions has
not been considered with reference to the contexts in which the questions are uttered.
This issue will be addressed in greater detail in section 2.1.3.

Third and lastly, in connection with limited understanding of the pragmatic
meanings of ma-particle questions, little research has been done on how they are
invoked in discourse. In other words, how they are prosodically manifested in ma-
particle questions is poorly understood. This issue will receive further elaboration and
investigation in Chapter 3 as the central topic of study in this thesis.

2.1.3 Pragmatic Implications of Ma-Particle Questions in Discourse

As briefly noted in section 2.1.2, the non-neutrality of ma-particle questions
has not been well understood in the syntax-oriented approach of earlier studies. In this
regard, Li and Thompson (1981) need mentioning in that they do pay attention to the relationship between non-neutrality and context in their functional approach to syntax. According to them, the neutrality or non-neutrality of the ma-particle question is determined by the context within which it is uttered. Therefore, the ma-particle question uttered under neutral context is interchangeable with the corresponding A-not-A question. Furthermore, they point out that a speaker’s presupposition in ma-particle questions can be either negative or affirmative depending upon context. Let’s consider Li and Thompson’s (1981:550) example, given here in (5).

(5)  

Ni3 chi1 ping2guo0 ma0?

you eat apples PRT

“Do you eat apples?”

According to them, this question can be either neutral or non-neutral. And, when it is non-neutral, the person asking the question may assume either that the hearer eats apples or that s/he does not. For example, this question can be uttered in the context where a speaker is puzzled at seeing the hearer eating an apple, since the speaker thinks that the hearer does not eat apples. As in this case, when the ma-particle question is uttered to reconcile the conflict between a speaker’s preknowledge and the reality, it implies a positive presupposition. However, Chu (1998) refutes Li and Thompson’s argument that a speaker’s assumption in positive ma-particle question can be affirmative. In her view, the presupposition of the question in (5) is negative in
that the question implies ‘I did not expect you to eat apples.’\textsuperscript{14} With regard to this
disagreement on the presupposition, the present study treats the presupposition of the
question in (5) as a positive one for the reason that the proposition is not negated by
the answer expected from the hearer.

While the contexts provided by Li and Thompson show only one type of
positive assumption as seen in (5), various types of presupposition of ma-particle
questions are provided by Huang (1986). Based on the data in written vernacular
language, he systematically demonstrates two important things. First, he shows that
positive ma-questions can have either positive or negative presuppositions. Second, he
demonstrates that the percentage of use of ma-particle questions as rhetorical
questions has been growing in vernacular language throughout history from Yuan
dynasty to mid-1950s. However, since the data in his study were collected from early
written language, the results of his study may not necessarily reflect the functions of
ma-particle questions in the discourse of currently-spoken Mandarin.

In addition, Hu (1991) points out that the presuppositional meaning is not
determined by the inherent feature of ma-particle questions, but varies according to
pragmatic factors. Furthermore, Hu pays attention to the interaction between
pragmatic meanings and intonation in ma-particle questions (see detailed discussion in
section 2.2.2.1). Nonetheless, he does not indicate how the pragmatic implications of
ma-particle questions differ depending on context.

\textsuperscript{14} Li and Thompson’s example that Chu (1998:123) examines is: \textit{Oui, ni3 yi3jing1 hui2lai2 le0 ma0?}
“Oh!, are you back already?” Chu claims that a speaker’s presupposition of this question is negative
since the question implies ‘I didn’t expect you to return so soon.’
As previously noted, earlier scholars provide very little context for the use of the *ma*-particle question, or else they use context from early written vernacular texts. As a result, pragmatic meanings of *ma*-particle questions and their relationship to prosodic patterns in current Mandarin are not effectively demonstrated in these earlier works.

To investigate how *ma*-particle questions function in discourse, this study considers how presupposition is differently realized according to context. Let’s take, for example, the *ma*-particle question in (6), from data in the experiment of this thesis.

(6)  
*ni3 shuo1 ri4wen2 ma0?*

you speak Japanese PRT

“Do you speak Japanese?”

We can think about the presupposition of this question with respect to four different contexts, A through D, as follows. (*S* and *H* indicate speaker and hearer, respectively.)

A.  
*S* hasn’t seen *H* study or speak Japanese, and hence thinks that *H* does not speak it. One day, during a conversation with *H*, *S* realizes that *H* has a lot of Japanese friends. Astonished, *S* says, “*ni3 shuo1 ri4wen2 ma0?*”
In this context, the speaker asks the question, with a negative assumption about the hearer’s ability to speak Japanese. That is, s/he doubts the possibility that the hearer can speak Japanese, although that possibility cannot be totally excluded in a real situation. The hearer may be able to speak Japanese, in contrast to the speaker’s belief. Therefore, this question brings in the speaker’s incredulity. Hereafter, this type of questions will be called an ‘incredulity’ question.

B. S is a learner of Japanese. H does not know Japanese. When S gets a bad grade in his/her Japanese class, H annoys S by offering his/her own analysis as to why S didn’t get a good grade. S gets upset with H for poking his/her nose into something that s/he knows nothing about, and so says to H, “Ni3 shuo1 ri4 wen2 ma0?”

In context B, both the speaker and the hearer know that the hearer does not speak Japanese. Therefore, when the speaker asks “Do you speak Japanese?”, s/he indirectly asserts “You do not speak Japanese at all.” By asking a rhetorical question, the speaker denies any possibility that the hearer can speak Japanese. As a result, one of the two possible choices for an answer is totally excluded. This type of question implies the speaker’s denial.

C. S is a learner of Japanese. While studying Japanese in the library, S has a couple of puzzling questions. Noticing that one person is reading a text written
in Japanese, S goes over to his table to ask him some questions about Japanese.
Before s/he asks those questions, S says “Ni3 shuo1 ri4 wen2 ma0?”

In this context, a speaker has an affirmative presupposition that a hearer can
speak Japanese because the hearer is reading a Japanese book. Although it could be
the case that the hearer can only read written text but is not good at speaking the
language, it is very likely that the hearer can speak Japanese. Therefore, what is
implied in this question is “I think you can speak Japanese, isn’t that so?” Hereafter,
this type of question will be called a ‘confirmation-soliciting’ question.

D. S is a learner of Japanese. S had a hard time making himself/herself understood
while talking on the telephone in Japanese. As a result, such conversations
were not very successful. Next day, S heard from one of her friends that H, S’s
new roommate, speaks Japanese fluently. S is upset that H did not help him/her
at all since H was in the room while A was talking on the phone. So, S says to
H “Ni3 shuo1 ri4wen2 ma0?”

In context D, the speaker asks a question not to seek information but to accuse
the hearer of not having helped him/her. Since both the speaker and the hearer know
that there is only one possible answer, namely, ‘yes’, this question is uttered for a
specific purpose, such as accusation. This type of question can be regarded as a
rhetorical question used to accuse the hearer of something.

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The preceding four scenarios show that the same question can be uttered with either negative or affirmative presupposition depending upon the context. Moreover, the degree of presuppositional belief can differ as shown in comparing A and B, and C and D. In both A and B, the utterances imply a negative presupposition. The utterance spoken in context A, however, conveys mild presupposition compared to that uttered in context B. Correspondingly, an affirmative presupposition is implied in both context C and D. However, the presupposition in the utterance spoken in context C is weaker than that uttered in context D (the degree and polarity of non-neutrality for the ma-particle question are discussed in detail in section 3.3.1).

Now, we need to consider how types of non-neutrality of ma-particle questions are felicitously produced. To investigate this issue, we will address the early studies on intonation of ma-particle questions and discuss what we need to take into consideration to understand the relationship between presupposition and prosodic manipulations of ma-particle questions. This is taken up in section 2.2.

2.2 Prosodic Studies on Ma-Particle Questions

The discussion on intonation patterns of ma-particle questions will begin with the review of prosodic studies on ma-particle questions in section 2.2.1. Since discussion of the intonation of ma-particle questions is often conducted in conjunction with echo-questions, the intonational difference between syntactically marked and unmarked yes-no questions will be discussed also in section 2.2.1. In section 2.2.2, the studies on the relationship between intonational manipulations and modalities will be
addressed. Also discussed will be the issue of non-neutrality and prosodic manipulations in *ma*-particle questions.

2.2.1 Intonation of *Ma*-Particle Questions

The intonation of *ma*-particle questions has been the subject of debate. There are four major viewpoints. First, the interrogative intonation has been described as having a rising intonation on the entire utterance. Since Chao's observation, the instrumental studies in Ho (1977) and Gårding (1987) have supported this view.\(^\text{15}\)

Second, in later Chao (1968:40-44), it has been claimed that a local rise is realized on the last syllable or on the *ma*-particle. Chao notes that an additional rising pitch on the voiced portion of the last syllable is realized in particle questions. As for the *ma*-particle question, he says that its ending pitch is usually fairly high and that it ends in a slight drawl. The local rise on the *ma*-particle is also observed in Liu et al. (1983).

Third, the intonation of the *ma*-particle questions is very similar to that of the declarative sentence. Elliot (1965), Wu (1982), Hu (1991), Fang (1992), and Yuan (1993) have observed a level or falling intonation in *ma*-particle questions. Some scholars (e.g., Lyu 1985, Lin 1985, Liu 1988) explain this observation functionally, arguing that since 'interrogative information' depends not on intonation but on the *ma-

\(^{15}\) Comparing three types of sentences: interrogative, exclamatory, and declarative, Ho (1977) claims that the overall intonation of the interrogative is higher than that of the declarative and lower than that of the exclamatory. According to him, if there is a sequence of low tones in interrogatives, a rising tone is realized only at the end of the utterance.
particle itself, the so-called ‘interrogative intonation’ is therefore not a necessary element in *ma*-particle questions.

Fourth and last, Shen (1990) claims that, as with all other types of interrogatives, the *ma*-particle question does not have a rising intonation. However, her view differs from the third viewpoint above in that her experimental research shows an overall-raised intonation in *ma*-particle questions. Because Shen provides a fairly comprehensive phonetic study of intonation patterns of interrogatives in Mandarin, the results of her study are briefly summarized in Table 2.2, with sentence types below based on discussions in the present study.

<table>
<thead>
<tr>
<th>Tune</th>
<th>Sentence type</th>
<th>Description of Intonation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tune 1</td>
<td>Statement</td>
<td>starting with a mid key, moving upward to a mid-high key at the highest peak, falling to a low register at the ending point.</td>
</tr>
</tbody>
</table>
| Tune 2  | *Ma*-particle question  
Echo-question | starting with a mid-high key, moving upward to a high key at the highest peak, dropping, but not too low, ending in the high or mid-high register. |
| Tune 3  | A-not-A question  
Alternative question  
WH-question | starting with a mid-high key, moving upward to a high key at the highest peak, stepping down and ending with a low key. |

Table 2.2. Intonational patterns in Mandarin presented in Shen (1990:26)
Shen analyzes the intonation patterns in Mandarin into three ‘tunes,’ as shown in Table 2.2. According to her, because all types of interrogatives start at a higher pitch, the perceptually crucial prosodic cue to differentiating interrogative intonation for questions from declarative intonation for statements is not found at the ending point but, rather, at the beginning point of the utterance. Also according to Shen, the perceptual importance of high starting point of interrogatives was first observed by DeFrancis (1963). Rand (1969) makes a similar observation.

As in Table 2.2, Shen’s categorization of the tunes includes the intonation of echo-questions in Mandarin. Although she does observe that the echo-question has a higher pitch -- both at the highest point and at the ending point of the intonation -- than that of the ma-particle question, she does not treat them as having different tunes, and thereby restricts the number of tunes to three.

In contrast to Shen, many scholars who argue that a rising intonation is not necessary in ma-particle questions have discussed the intonation of ma-particle questions with reference to that of echo-questions. Comparing intonation patterns of the two types of questions, Lin (1985), Lyu (1985), Liu (1988), Fang (1992), Yuan (1993) and others argue that a rising pitch is essential only in echo-questions. For them, since the function as a yes-no question is signaled only by prosodic manipulation in echo-questions, a rising intonation is crucial in echo-questions. Lin (1985) further asserts that the echo-question and the ma-particle question are

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16 For Shen (1990:28), the three ‘tunes’ refer to “the basic patterns of a colorless, neutral, and matter-of-fact intonation.”

17 Lyu (1985) claims that a rising intonation is not necessary not only in ma-particle questions but also in other types of questions such as WH-word questions, disjunctive questions, and A-not-A questions.
‘complementary’ in terms of how the interrogative function is specified. That is, whereas the interrogative function of the echo-question is carried by the rising intonation on the last part of the utterance, the ma-particle signals the interrogative function in the ma-particle question with no interrogative intonation. However, in none of these studies were phonetic experiments conducted to confirm their observations. The scholars’ different views and analyses of the intonation of ma-particle questions and echo-questions are summarized in Table 2.3.

<table>
<thead>
<tr>
<th></th>
<th>Rising intonation</th>
<th>Non-rising intonation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rise localized to the end</td>
<td>Global rise</td>
</tr>
<tr>
<td>Ma-particle</td>
<td>Chao (1968)</td>
<td>Chao (1933a)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fang (1992)</td>
</tr>
</tbody>
</table>

Table 2.3. Early observations on the intonation patterns of neutral ma-particle questions and echo-questions
As Table 2.3 shows, there have been different claims as to the intonation patterns of *ma*-particle questions and echo-questions. The intonation patterns of non-neutral *ma*-particle questions are even less well understood. This will be seen in section 2.2.2, on the studies of the interaction between prosodic manipulation and non-neutrality.

### 2.2.2 Intonations and Modalities

In an early study Chao (1933a) notes that intonational manipulation in Chinese play an important role in expressing moods and attitudes of the speaker. He further states that the patterns of ‘expressive intonation’ can be distinguishable from the pitch modulation of the lexical tones. He illustrates the falling ‘expressive intonation’ as being realized in enumerations, protesting statements, affected exclamations, and in contexts of satisfaction over a new situation. Later, Chao (1968:812–814) illustrates the modalities expressed by a rising and a falling pitch as follows: rising ending for incredulity, impatience, and peremptory command; falling ending for lively enumeration to impress, hearty agreement, correcting errors, remonstrance, reassurance, pretend emotion, and vocative forms.

In this regard, Shen (1990) asserts that her three ‘tunes’ function as the basis for any variation evoked by non-neutrality. Therefore, with ‘tunes’ intact, any pitch manipulation for non-neutrality or emphatic prominence is superimposed onto the ‘tunes’. However, a recent experimental study by Yang (1995) argues that a neutral
intonation (a ‘tune’ in Shen’s terms) is itself a particular type of emotional intonation. Given limited understanding of the interaction between intonation and modalities, the intonational manipulation to express modalities in *ma*-particle questions is even less well understood.

Although there is still much that we don’t yet know concerning this topic, it seems that there are at least two kinds of prosodic manipulation that serve to bring the presupposition of the *ma*-particle question into discourse: manipulation of the ending pitch, and narrow-focus. In section 2.2.2.1, the relationship between modulation of ending pitch and presupposition is discussed, and in section 2.2.2.2, how narrow focus influences the interpretation of the utterance will be discussed.

### 2.2.2.1 Manipulation of the Ending Pitch

The ending pitch of the *ma*-particle question varies depending on the emphasis or the presupposition expressed. On the first issue concerning the manipulation of the ending pitch for emphasis, Elliot (1965), Lin (1985), Fang (1992), and Yuan (1993) have argued that the emphatic *ma*-particle question has a rising pitch on the *ma*-particle whereas the ending pitch of the non-emphatic *ma*-particle question is level or falls. Wu (1982), however, offers a different view. According to him, the intonation either rises or falls on the last syllable for purposes of emphasis. However, despite discussing the emphatic *ma*-particle question, none of these studies clarifies the notion of ‘emphatic *ma*-particle question’. These studies do not explain which constituent is
emphasized in this type of question, nor do they address how the modulation of an ending pitch affects the interpretation of the *ma*-particle question. Moreover, no experimental research has been done to confirm their claims.

With regard to the intonational manipulations to express modalities of *ma*-particle questions, Liu et al. (1983:238) suggest that the intonation rises at the end of those neutral *ma*-particle questions and falls at the end of *ma*-particle questions that imply a speaker’s impatience with, or blaming of the listener. On the other hand, Hu (1991) claims that a neutral *ma*-particle question with no speaker’s assumption is produced with the intonation of declarative sentences, whereas it implies a speaker’s doubt when it is uttered with a rising pitch on the *ma*-particle.

These observations are contrary, and are based on impressionistic observation, and they fail to present a more systematic understanding of the interaction between various kinds of presupposition and intonational manipulations. They limit non-neutrality of *ma*-particle questions to expression of blaming or doubt and associate non-neutrality with either rising or falling ending pitch. Other kinds of possible global or local manipulation of intonation are not taken into consideration. These shortcomings are addressed in Chapter 3 where the F0 patterns of *ma*-particle questions will be examined to gain a better understanding of how intonation is manipulated to express different presuppositions.
2.2.2.2 Focus-Related Prosodic Prominence

In addition to the manipulation of the ending pitch, it has been observed that prosodic prominence affects the semantic and pragmatic interpretation of the ma-particle question. Let’s consider the ma-particle question in example (7) from Lyu (1985:242).

(7)  Ni3 ming2tian1 dao4 che1zhan4 qu4 mai3 piao4 ma0?

you tomorrow to station go buy tickets PRT

"Are you going to the station to buy a ticket tomorrow?"

According to Lyu (1985), the question in (7) may be differently interpreted by different alignment of prosodic prominence to a syntactic constituent as seen in A through D in (8). (Text in bold capital letters indicates prosodic prominence.)

(8)  A  NI3 ming2tian1 dao4 che1zhan4 qu4 mai3 piao4 ma0?

"Are YOU (as opposed to some other person) going to the station to buy a ticket tomorrow?"

B  Ni3 MING2tian1 dao4 che1zhan4 qu4 mai3 piao4 ma0?

"Are you going to the station to buy a ticket TOMORROW (as opposed to today)?"
C  Ni3 ming2tian1 dao4 che1ZHAN4 qu4 mai3 piao4 ma0?
    "Are you going to the STATION (as opposed to some other place) to buy a
ticket tomorrow?"

D  Ni3 ming2tian1 dao4 che1zh4n4 qu4 mai3 PIAO4 ma0?
    "Are you going to the station to BUY A TICKET (as opposed to seeing
someone off) tomorrow?"

However, although Lyu notes the prosodic prominence for contrastive focus,
he does not explicitly address how prosodic prominence is realized on the narrow
focused constituent. According to him, it seems that only a single syllable is made
prominent when a disyllabic word or phrase is focused. For example, as seen in
context D, when a whole VP (mai3 pico4) is emphasized, only the noun or the last
constituent in a VP (piao4) is prosodically prominent. However, he does not account
for how the ambiguity between prosodic prominence on the very narrow focused
object noun in a transitive VP and that on somewhat less narrow focused VP is
disambiguated.

Ending pitch and focus-related prosodic prominence are involved manifesting
the implications of ma-particle questions. However, little attention has been paid to
how the two manipulations are integrated to express different pragmatic meanings of
ma-particle questions. To address that, we turn to Chapter 3.
CHAPTER 3

EXPERIMENTAL RESEARCH ON INTONATION PATTERNS OF
MA-PARTICLE QUESTIONS

This chapter presents an experiment conducted to see the intonation patterns of neutral ma-particle questions and the relationship between prosodic manipulations and the non-neutral interpretation of ma-particle questions. Data were collected from three native speakers of Mandarin and were analyzed in terms of relevant F0 parameters. The results show that the intonation pattern of the ma-particle question is globally and locally manipulated to represent the neutrality or type of non-neutrality.

3.1 Methods

3.1.1 The Sets of Utterances

Five sets of utterance types were elicited from three native speakers. Each set, which is based on the same declarative ‘base’ sentence, is composed of nine utterance types: declarative, echo-question, A-not-A question, neutral ma-particle question, and four non-neutral ma-particle questions, including rhetorical questions. The declarative
sentence in each set contains 4 to 7 syllables and has the same syntactic structure, uniformly consisting of a subject, followed by a transitive verb, and then followed by a noun phrase that is the direct object. To capture the prosodic effects of non-neutrality and to avoid interference of syntactic structures that are related to focus or presupposition, only positive forms of *ma*-particle questions that do not contain syntactic construction of focus will be investigated as data in this study.\textsuperscript{18} In this spirit, adverbs that add presuppositional meaning to the utterance are not included in these five sets of utterances.\textsuperscript{19}

The *ma*-particle questions in the five sets of utterances are in (1):

(1)

Set 1 \textbf{Ni3men0} \textit{mai4} \textit{yang2rou4} \textit{ma0}?

\text{you (pl) sell mutton PRT}

"Do you (pl.) sell mutton?"

Set 2 \textbf{Ou1 Ying1} \textit{he1} \textit{wu3liang2ye4} \textit{ma0}?

\text{name drink wuliangye (a kind of alcohol) PRT}

"Does Ou Ying drink wuliangye?"

---

\textsuperscript{18} One of the syntactic constructions for focusing is to place the copular verb *shì* 'be' directly before the constituent that the speaker wants to put an emphasis on. According to my preliminary experiment, the copular verb not only indicates the narrow focused constituent but also moves the prosodic prominence. For example, *shì \textbf{ni3men0} mai4 yang2rou4*. "You (pl.) sell mutton." bears narrow focus on the subject *ni3men0* 'you (pl.)', but the prosodic prominence is realized on the copular verb *shì*. The interaction between the syntactic structure and prosodic prominence needs to be investigated in future research.

\textsuperscript{19} The adverbs that add presuppositional meanings to an utterance are: *hai2* "still, even", *cai2* "only then", *lian2...ye3 (/dow1)* "even...also" and so forth.
As seen in (1), most syllables in the utterances contain sonorant consonants so that the pitch track can be traced with little interference from consonants. Moreover, to observe how the tonal value of ma-particle is realized with reference to the tone preceding ma, four different lexical tones are placed in the position immediately preceding the ma-particle.

Among the utterances in each set, no explicit contexts were provided for the echo-questions, the A-not-A questions, and the neutral ma-particle questions. Rather, the subjects were told to produce these under the assumption that they do not know the
To elicit the non-neutral *ma*-particle questions, four different contexts were provided to the subjects, and each subject was asked to produce the same *ma*-particle question as naturally as possible under the contexts given by the experimenter.

The contexts were designed to elicit four different types of non-neutral *ma*-particle questions. In order to see the interaction between the type of non-neutrality and intonational manipulations, we classified non-neutrality according to its polarity and degree of non-neutrality. Table 3.1 presents the classification of the non-neutrality with corresponding context among Contexts A through D. To illustrate, (2) below the table gives Contexts A through D that were used to elicit non-neutral *ma*-particle questions for Set 1 of *Ni3men0 mai4 yang2rou4 ma0*? “Do you (pl.) sell mutton?”

<table>
<thead>
<tr>
<th>Degree of Non-Neutrality</th>
<th>Polarity</th>
<th>Negative Presupposition</th>
<th>Positive Presupposition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neutral</td>
<td></td>
<td>Neutral Context</td>
<td></td>
</tr>
<tr>
<td>Mild presupposition</td>
<td>‘incredulity’</td>
<td>‘confirmation-soliciting’</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Context A</td>
<td>Context C</td>
<td></td>
</tr>
<tr>
<td>Strong presupposition</td>
<td>‘denial’</td>
<td>‘accusation’</td>
<td></td>
</tr>
<tr>
<td>(rhetorical question)</td>
<td>Context B</td>
<td>Context D</td>
<td></td>
</tr>
</tbody>
</table>

Table 3.1 The polarity and the degree of non-neutrality of *ma*-particle questions

---

20 The subjects were asked by the experimenter: “You don’t know the answer. How would you ask this question?” Both A-not-A questions and echo-questions were elicited in this way.

42
Whenever $S$ goes to a butcher shop to buy mutton, they (i.e., butcher and other people working there) say it won’t be available until next time. One day, $S$ went to the market to buy some other food and dropped by the butcher’s shop since the butcher shop is in the market. To inquire again as to whether they have mutton or not -- although she knows it is very unlikely that they have it -- $S$ asks “Ni3 men0 mai4 yang2 rou4 ma0?”

$S$ is a regular customer of a certain butcher shop. However, since they don’t sell mutton, $S$ went to another butcher shop to buy it. On her way home, she happened to meet the butcher from that meat shop (or a person working there). The butcher saw $S$ buy some meat at a butcher shop other than his, and asked her why she ($S$) didn’t buy meat in his shop. $S$ says in reply “Ni3 men0 mai4 yang2 rou4 ma0?”

$S$ entered a butcher shop. S/he glanced at a price list hanging on the wall that says that mutton is available today. The butcher asked. “What would you like today?” To make sure they have mutton, s/he asks “Ni3 men0 mai4 yang2 rou4 ma0?”

$S$ is an animal lover (needless to say, a vegetarian) who is worried about the decreasing population of sheep. $S$’ friend who owns a restaurant asked $S$ to drop by his/her restaurant to eat fresh mutton. Surprised and angry, $S$ says “Ni3 men0 mai4 yang2 rou4 ma0?”
The classification of non-neutrality proposed here is to study two aspects of the relationship between prosodic manipulations and presupposition: one, the relationship between a given type of non-neutrality and intonational manipulation, and two, the interaction between the consistency of using certain types of prosodic manipulation and the degree of non-neutrality.

3.1.2 Research Subjects

The data for the experiment were collected from three native speakers of Mandarin Chinese, all of whom come from mainland China. Two subjects are female, and one is male. One is in her late 30's, and two are in their late 20's. All of them were graduate students in the Department of East Asian Languages and Literatures at The Ohio State University when they participated in the experiment. Also, all have had the experience of teaching Chinese at The Ohio State University. One subject has been in the U.S. for five years, and the others for less than one year. Background information on the three speakers is summarized in Table 3.2.
<table>
<thead>
<tr>
<th>subject</th>
<th>sex</th>
<th>approximate age</th>
<th>birth place</th>
<th>How long in Beijing</th>
<th>How long in U.S.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Q</td>
<td>F</td>
<td>Late 30’s</td>
<td>Xiangfan</td>
<td>0 year</td>
<td>5 years</td>
</tr>
<tr>
<td>Subject W</td>
<td>F</td>
<td>Late 20’s</td>
<td>Taiyuan</td>
<td>5 years</td>
<td>10 months</td>
</tr>
<tr>
<td>Subject L</td>
<td>M</td>
<td>Late 20’s</td>
<td>Baoding</td>
<td>4 years</td>
<td>10 months</td>
</tr>
</tbody>
</table>

Table 3.2 Information on research subjects

3.1.3 Recording Procedure

Before recording the utterances, the instruction and contexts for eliciting utterances were given to the subjects to read so that they fully understood the contexts and could practice if they needed to\(^{21}\). Each utterance was spoken twice by each subject, and the subjects were instructed to pause between these two repetitions to prevent the following utterance from being influenced by the first utterance. The utterances were recorded into a DAT recorder in a sound-proof booth at the studio of the College of Humanities at The Ohio State University. Eighty utterances were recorded from each subject and digitized into wave files using Sound Edit 16. In total,

\(^{21}\) Instructions and the contexts were given to Subject W in the morning and recording was done that same afternoon. Subjects L and Q received the information two days before the recording.
240 utterances were used for the experiment. ((9 utterances x 2) x 5 sets = 80 utterances. 80 utterances x 3 subjects = 240 utterances)\textsuperscript{22}

3.1.4 Comparison of F0 Parameters

As briefly noted in section 1.2, recent experimental studies show that the F0 plays a crucial role in the realization of lexical tones, intonation, and focus (Shih 1988, Shen 1990, Jin 1996, Xu 1999). Therefore, this study analyzes the data by comparing the relevant F0 contours of the utterances. For comparison, each recorded utterance was segmented into syllables based on waveform, spectrogram, and audio perception.

To understand the intonation patterns of neutral ma-particle questions, the F0 tracks of neutral ma-particle questions were compared with those of declarative sentences, echo-questions, and A-not-A questions. Moreover, to see the prosodic manifestation of the non-neutrality, the intonation patterns of non-neutral ma-particle questions were compared with those of neutral ma-particle questions. And when there are any similarities among the intonation patterns of different types of non-neutral ma-particle questions, they were also compared among themselves to understand better the prosodic factors that distinguish them. Since lexical tone specification influences the pitch effect of intonational manipulations, we compared utterance types within the same set uttered by the same speaker.

\textsuperscript{22} Each speaker actually produced about 90 utterances because some utterances had to be redone due to errors of intonational or segmental production.
3.2 Result of Experiment

This section discusses the results of the investigation of neutral and non-neutral *ma*-particle questions. In section 3.2.1, the intonation patterns of neutral *ma*-particle questions will be discussed with reference to those of declarative sentences and echo-questions. Section 3.2.2 will present the intonation patterns of A-not-A questions and discuss the relationship between intonation patterns and the functional difference of *ma*-particle questions and A-not-A questions. Section 3.2.3 will demonstrate the interaction between intonational manipulations and non-neutral *ma*-particle questions.

3.2.1 Intonation Patterns in Neutral *Ma*-Particle Questions

In this section, the particular concern is to provide a general picture of the F0 contour in neutral *ma*-particle questions. This is also related to the issue of how the so-called ‘interrogative intonation’ is realized in *ma*-particle questions. In the following sections 3.2.1.1 and 3.2.1.2, the intonational patterns of neutral *ma*-particle questions will be investigated in comparison with those of declarative sentences and echo-questions.
3.2.1.1 Intonation Patterns in Neutral Ma-Particle Questions

As noted in Section 2.2.1, there have been controversial observations concerning the phonetic shape of the intonation of neutral ma-particle questions. Since interrogative intonation has been discussed with reference to the intonation of declarative sentences, and the comparison of the two clearly shows the characteristics of the intonation of ma-particle questions, we will explore the intonation patterns of these two types of utterances.

Figures 3.1 through 3.4 show the F0 contours for the declarative sentences superimposed on those for the corresponding neutral ma-particle questions uttered by Subject L.
Figure 3.1. Overlaid F0 contours for declarative sentence and neutral *ma*-particle question [Subject L]:

L1: Li Li is buying this car.
L1: Li Li is buying this car.
Comparing the two utterances in Figure 3.1, we can see that while the overall intonation patterns are very similar, the F0 of the ma-particle question is higher than that of the corresponding declarative sentence. Also, note that the pitch of the ma-particle remains fairly high. Considering that the tonal value of the neutral-toned syllable following Tone 1 is realized as low, we think that there is a prosodic element raising the pitch of the ma-particle. These prosodic manipulations are also observed in Figure 3.2.
Figure 3.2. Overlaid F0 contours for declarative sentence and neutral *ma*-particle question [Subject L]:

*Ni3 shuo1 ri4wen2*. “You speak Japanese.”
*Ni3 shuo1 ri4wen2 ma0?*. “Do you speak Japanese?”

......... declarative sentence
______ neutral *ma*-particle question
Figure 3.2 shows that the overall pitch of the *ma*-particle question is slightly higher than that of the declarative sentence. Moreover, it is clearly seen that the rising tone of *wen2* continues to rise to an even higher pitch target in the *ma*-particle in the *ma*-particle question. According to Chao (1968), the neutral-toned syllable following Tone 2 is realized as mid-high due to the influence of the preceding lexical tone.\(^{23}\) However, the pitch of the *ma*-particle here is considerably raised in spite of the preceding Tone 2.

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\(^{23}\) Pitch drop on a neutral tone after a Tone 2 syllable is also observed and exemplified in Peng et al. (submitted).
Figure 3.3. Overlaid F0 contours for declarative sentence and neutral ma-particle question [Subject L]:

*Ling2 ling0 he1 y1 y1 ping2 niu2nai3.* “Ling ling is drinking a bottle of milk.”
*Ling2 ling0 he1 y1 y1 ping2 niu2nai3 ma0?* “Is Ling ling drinking a bottle of milk?”

........ declarative sentence
_____ neutral ma-particle question
In Figure 3.3 also, we observe that the overall pitch of the $ma$-particle question is higher than that of the declarative sentence. Note that whereas the last syllable $nai3$ is realized as low-falling with creaky voice in both utterances, the pitch of the $ma$-particle is noticeably raised in the $ma$-particle question.
Figure 3.4. Overlaid F0 contours for declarative sentence and neutral *ma*-particle question [Subject L]:

*Ouying1 he1 wu3liang2ye4* “Ou Ying drinks wuliangye.”
*Ouying1 he1 wu3liang2ye4 ma0? “Does Ou Ying drink wuliangye?”*

......... declarative sentence
_____ neutral *ma*-particle question
Figure 3.4 shows that while the pitch levels on *OuYing* are very similar in the two utterances, the pitch of the rest of the utterance is gradually raised in the *ma*-particle question. Therefore, it seems that a globally rising trend is realized in the *ma*-particle question. In addition, we see that the fairly high pitch is maintained over the *ma*-particle.

As seen in Figures 3.1 through 3.4, both global and local manipulations are involved in the intonation of neutral *ma*-particle questions. First, with respect to global manipulations, we observe that the overall pitch is raised, as in Figures 3.1 through 3.3, or the pitch is generally raised toward the end, as in Figure 3.4.²⁴ Second, we note that there is a local rise (or leveling out, as opposed to an expected fall) on the *ma*-particle itself. Therefore, the *ma*-particle has its own high tonal target regardless of tone on the preceding syllable, as seen in Figures 3.1 through 3.4. Given the realization of the *ma*-particle as high, we posit a high-level prosodic element - a ‘boundary tone’ - that functions to manipulate the pitch at the end of the utterance. We can say that, in Figures 3.1 through 3.4, a high boundary tone is realized in the neutral *ma*-particle questions, whereas the corresponding declarative sentences do not have a boundary tone.

The observation that the tonal value of the *ma*-particle is determined by a boundary tone is also supported by Subject W’s *ma*-particle questions. These are shown in Figures 3.5 through 3.8. Each figure presents Subject W’s declarative sentence and two types of corresponding *ma*-particle question: neutral question and

²⁴Interestingly, this speaker does not seem to have a very marked downstep after tones other than Tone 1. This may explain why the pitch difference does not increase over the course of the utterance in Figures 3.1a-3.1c.
confirmation-soliciting question. In each figure, a different one of the four lexical tones precedes the *ma*-particle. Observe the intonation pattern of the neutral *ma*-particle question and different kinds of ending pitch among the three types of utterances. We turn first to Figure 3.5.
Figure 3.5. Comparison of boundary tones: Declarative sentence, neutral ma-particle question, and confirmation-soliciting ma-particle question [Subject W]:

\[Li3 \ Li4 \ mai3 \ zhe4 \ liang4 \ chel. \ "Li \ Li \ is \ buying \ this \ car.\]  
\[Li3 \ Li4 \ mai3 \ zhe4 \ liang4 \ chel \ ma0 \ "Is \ Li \ Li \ buying \ this \ car?\]

---------- declarative sentence
---------- neutral ma-particle question
---------- confirmation-soliciting ma-particle question
Comparing first the neutral question and the declarative in Figure 3.5, we see that the overall pitch of the neutral question is higher than that of the declarative sentence. Moreover, although there is no big difference in pitch height on the first syllable, Li3, the difference becomes greater toward the end of the question. Therefore, we can say that the neutral ma-particle question has a rising trend. This rising trend reverses any effect of downstep triggered by Tone 4 on liang4.

In addition, we observe that a high pitch is realized on the ma-particle in the neutral question uttered by Subject W. That is, the high tone of che1 is continued on the ma-particle. We can compare this high pitch with the ending pitch of the confirmation-soliciting question. We see that the pitch of ma-particle in the confirmation-soliciting question is very low. Therefore, whereas we posit a high boundary tone for the neutral ma-particle question, we posit a low boundary tone for the confirmation-soliciting question.
In Figure 3.6 also, we see that while the pitch heights at the beginning of the neutral and confirmation-soliciting utterances are very similar, the difference in pitch becomes bigger toward the end, with a resulting rising trend. In addition, there is a local rise on the ma-particle. Observe that, in spite of the same lexical tone preceding the ma-particle, the pitch of the ma-particle is realized differently in neutral versus confirmation-soliciting questions precisely as a result of different boundary tones occurring in those two types of ma-particle questions: a high boundary tone on the neutral ma-particle question and a low boundary tone on the confirmation-soliciting ma-particle question. The result is that a local rise on the ma-particle is realized in the neutral question, versus a local fall on the particle in the confirmation-soliciting question. In the case of the declarative, the lowered pitch on the last syllable, wen2, is due to the downstep triggered by the preceding syllable, ri4, with high-falling tone (hence a high target followed by a low target, with the low triggering the downstepping on wen2.).
Figure 3.7. Comparison of boundary tones: Declarative sentence, neutral ma-particle question, and confirmation-soliciting ma-particle question [Subject W]:

*Ling2 ling0 he1 yì lǐ ping2 niú2nái3.* “Ling ling is drinking a bottle of milk.”
*Ling2 ling0 he1 yì lǐ ping2 niú2nái3 ma0?* “Is Ling ling drinking a bottle of milk?”

......... declarative sentence
_____ neutral ma-particle question
----- - confirmation-soliciting ma-particle question
Comparing the neutral question and the declarative in Figure 3.7, we can observe a general rising trend in the former. (The F0 of the low tone on nai3 in the declarative is not seen because of creaky voice.) In addition to the rising trend, we see a local rise on the ma-particle. By contrast, in the confirmation-soliciting question, we see the falling pitch on the ma-particle. That is, despite the highly-raised pitch overall, it seems that the relatively low pitch realized on the two last syllables, nai3 and the ma-particle, is due to a low boundary tone.
Figure 3.8. Comparison of boundary tones: Declarative sentence, neutral *ma*-particle question, and confirmation-soliciting *ma*-particle question [Subject W]:

*Ni3men0 mai4 yang2rou4*. “You sell mutton.”
*Ni3men0 mai4 yang2rou4 ma0?* “Do you sell mutton?”

......... declarative sentence
......... neutral *ma*-particle question
......... confirmation-soliciting *ma*-particle question
In Figure 3.8, we see that the overall pitch of \textit{yang2rou4} is higher in the neutral question than that in the declarative while the pitch of \textit{ni3men0} is similar in both. Therefore, we can say that the intonation of the neutral question has a rising trend, which obliterates the downstep seen in the declarative. In addition, observe that the pitch of \textit{rou4} does not fall much, and a high tone is realized on the following \textit{ma}-particle in the neutral question. The high pitch on \textit{rou4} in the neutral question can be compared with the clearly falling pitch of the corresponding syllable in both the declarative and the confirmation-soliciting question. Moreover, we see that the falling pitch continues onto a low tone target in the \textit{ma}-particle in the confirmation-soliciting question, again contrasting with the high level pitch in the \textit{ma}-particle in the neutral question. Therefore, again, we posit a high boundary tone for the neutral question and a low boundary tone for the confirmation-soliciting question.

As observed in Figures 3.5-3.8, the tonal value of the \textit{ma}-particle is not totally determined by the lexical tone on the preceding full-toned syllable. Rather, the pitch on the \textit{ma}-particle is affected by the presence of a boundary tone, which functions at the sentence level. We posit two boundary tones to mark a local rise versus a local fall on the \textit{ma}-particle. (Although these figures cannot show it, examination of the echo-question utterances in the next section shows that the high boundary tone at least can be realized on any last syllable of the utterance, and not just on the \textit{ma}-particle.)

Although we observe that a local rise is realized on the \textit{ma}-particle in the neutral \textit{ma}-particle questions of both Subjects L and W, Subject Q does not show such a rise. As exemplified in Figure 3.9, while the overall pitch is raised in the neutral \textit{ma-
particle question, it seems that a high boundary tone is not realized here. Although we
can speculate this may reflect influence from the variety of Mandarin that she speaks,
we need further study to understand the variation shown by this subject.
Figure 3.9. Overlaid F0 contours for declarative sentence and neutral *ma*-particle question [Subject Q]:

*Ni3 shuo1 ri4wen2.* “You speak Japanese.”
*Ni3 shuo1 ri4wen2 ma0?* “Do you speak Japanese?”

.......... declarative sentence
_______ neutral *ma*-particle question
3.2.1.2 Intonational Patterns in Echo-Questions and Ma-Particle Questions

This section will compare the intonation patterns of ma-particle questions with those of echo-questions. This will shed light on prosodic differences between syntactically marked and unmarked yes-no questions. Let's look at the intonation patterns of the echo-questions and the neutral ma-particle questions in comparison with those of the declarative sentence.
Figure 3.10. Overlaid F0 contours for echo-question, neutral ma-particle question, and declarative sentence [Subject W]:

Li3 Li4 mai3 zhe4 liang4 che1? “Li Li is buying this car?”
Li3 Li4 mai3 zhe4 liang4 che1 ma0 “Is Li Li buying this car?”

........ declarative sentence
_____ neutral ma-particle question
----- echo-question
Figures 3.10-3.13 show Subject W's utterances. In Figure 3.10, we see an overall rising trend and a local rise on the *ma*-particle in the neutral question. Comparing the intonation of declarative with that of the echo-question, we can observe that the echo-question also has a general rising trend and a local rise on the last syllable. However, the intonation of the neutral *ma*-particle question and that of the echo-question are different in that the rising trend is exaggerated in the echo-question.
Figure 3.11. Overlaid F0 contours for echo-question, neutral *ma*-particle question, and declarative sentence [Subject W]:

*Ni3 shuo1 ri4wen2? “You speak Japanese?”*  
*Ni3 shuo1 ri4wen2 ma0? “Do you speak Japanese?”*  

--------- declarative sentence  
_______ neutral *ma*-particle question  
------- echo-question
In Figure 3.11, in the echo-question, although the pitch on the syllable *ri4* is high due to narrow focus, we see a raised pitch on *shuo1*. Therefore, we think that the intonation of the echo-question has a rising trend, which reverses the pitch compression expected in postfocal position. Comparing this with the intonation of the neutral *ma*-particle question, we can observe a bigger rising trend in the echo-question. In addition, the echo-question has a local rise on the last syllable, *wen2*. 
Figure 3.12. Overlaid F0 contours for echo-question, neutral *ma*-particle question, and declarative sentence [Subject W]:

Ling2 ling0 he1 yi1 ping2 niu2nai3? “Ling ling is drinking a bottle of milk?”
Ling2 ling0 he1 yi1 ping2 niu2nai3 ma0? “Is Ling ling drinking a bottle of milk?”

......... declarative sentence
______ neutral *ma*-particle question
---- ---- echo-question
The exaggerated general rising trend and a local rise on the last syllable in the echo-question are observed also in Figure 3.12.
Figure 3.13. Overlaid F0 contours for echo-question, neutral ma-particle question, and declarative sentence [Subject W]:

Ni$\text{3men0}$ $\text{mai4}$ yang$\text{2rou4}$? "You (pl.) sell mutton?"
Ni$\text{3men0}$ $\text{mai4}$ yang$\text{2rou4}$ ma$\text{0}$? "Do you sell mutton?"

......... declarative sentence
______ neutral ma-particle question
-------- echo-question
Figure 3.13 shows similar tendencies. We see that the intonation of the echo-question is gradually raised toward the end, and the last syllable *rou* remains fairly high level due to the realization of a high boundary tone. Comparing the intonation patterns of the echo-question and the neutral question in Figure 3.13, we can observe that the general rising trend is exaggerated in the echo-question.

Figures 3.14 through 3.17 shows the same comparisons for Subject L. Just as with Subject W, both an exaggerated rising trend and a local rise on the last syllable are consistently seen in Subject L's echo-questions.
Figure 3.14. Overlaid F0 contours for echo-question, neutral *ma*-particle question, and declarative sentence [Subject L]:

$L$ $i_3$ $l_i_4$ $m_{a_1}$ $z_{e_4}$ $l_{i_4}a_4$ $c_{e_1}$?

"Li Li is buying this car?"

$L$ $i_3$ $l_i_4$ $m_{a_1}$ $z_{e_4}$ $l_{i_4}a_4$ $c_{e_1}$ $m_{a_0}$?

"Is Li Li buying this car?"

....... declarative sentence

_____ neutral *ma*-particle question

------ echo-question
For example, in Figure 3.14, while the overall intonation is slightly raised overall in the neutral *ma*-particle question, the intonation of the echo-question begins at a level intermediate between the declarative and neutral question, but ends considerably higher than either. It clearly shows a rising trend. Moreover, due to a high boundary tone, the pitch on the last syllable *cheI* is even higher than the high peak on *Li3 Li4*. 
Figure 3.15. Overlaid F0 contours for echo-question, neutral *ma*-particle question, and declarative sentence [Subject L]:

*Ni3 shuo1 ri4wen2?* “You speak Japanese?”

*Ni3 shuo1 ri4wen2 ma0?* “Do you speak Japanese?”

........ declarative sentence

_____ neutral *ma*-particle question

------ echo-question
Similarly in Figure 3.15, we see that while the pitch is merely slightly raised overall in the neutral *ma*-particle question, the intonation of the echo-question has both a rising trend and a local rise on its end. As a result, the pitch on the last syllable *wen2* continues to the considerably higher target than in the neutral question, although the two started out at about the same level on *Ni3*.
Figure 3.16. Overlaid F0 contours for echo-question, neutral *ma*-particle question, and declarative sentence [Subject L]:

*Ling2 ling0 he1 yi1 ping2 niu2nai3?* “Ling ling is drinking a bottle of milk?”
*Ling2 ling0 he1 yi1 ping2 niu2nai3 ma0?* “Is Ling ling drink a bottle of milk?”

......... declarative sentence
_____ neutral *ma*-particle question
----- echo-question
In Figure 3.16, we see that the intonation of the echo-question starts slightly higher than that of the declarative sentence, but the pitch difference is even greater at the end. This seems to be because of the rising trend of the intonation in the echo-question. And the highly raised tone of the last syllable nai3 represents the effect of the high boundary tone.
Figure 3.17. Overlaid F0 contours for echo-question, neutral ma-particle question, and declarative sentence [Subject L]:

Ni3men0 mai4 yang2rou4? “You sell mutton?”
Ni3men0 mai4 yang2rou4 ma0? “Do you sell mutton?”

....... declarative sentence
_____ neutral ma-particle question
------ echo-question
In Figure 3.17, we see the intonation patterns of the three types of utterances start at similar height, but those of both neutral question and echo-question are gradually raised with a local rise at the end. However, in the echo-question, we can see the rising trend is steeper than that of the neutral question. The especially high pitch on the last syllable *rou4* in the echo-question seems to be the result of both the exaggerated rising trend and the effect of the high boundary tone.

Thus, as seen in Figures 3.10-3.13 and 3.14-3.17, we observe that the intonation is simultaneously manipulated in two different ways in the echo-questions: there are a generally rising trend and a local rise on the last syllable due to the effect of a high boundary tone. Importantly, although the intonation of the neutral *ma*-particle question can be manipulated in the same way, we see a consistent and exaggerated rising trend in the echo-questions.

In this regard, Subject Q shows a slight difference in prosodic manipulation. We can see that the intonation is considerably raised from the beginning in the echo-question uttered by Subject Q. Figure 3.18 shows the overall-raised intonation and a local rise on the last syllable *chei*. 

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Figure 3.18 Overlaid F0 contours for echo-question, neutral ma-particle question, and declarative sentence [Subject Q]:

Li3 Li4 mai3 zhe4 liang4 che1? “Li Li is buying this car?”
Li3 Li4 mai3 zhe4 liang4 che1 ma0 “Is Li Li buying this car?”

........ declarative sentence
_____ neutral ma-particle question
---- ---- echo-question
3.2.2 Prosodic Comparison of *Ma*-Particle Questions and A-not-A Questions

This section studies the functional difference between A-not-A questions and *ma*-particle questions, as suggested by their prosodic differences. For a prosodic comparison of neutral *ma*-particle and A-not-A questions, we need to consider the overall intonation pattern of A-not-A questions. Figure 3.19 shows a typical intonation pattern of A-not-A questions.
Figure 3.19. A-not-A question: narrow focus on the first verb [Subject Q]:

Ni3men0 mai4 bu4 mai4 yang2rou4? “Do you (pl.) sell mutton?”
We observe two things from the A-not-A question in Figure 3.19. First, as there is a low falling pitch on the last syllable rou4, it seems that a high boundary tone is not realized on that utterance. Second, the first verb of the A-not-A structure mai4 is prominent, showing the locally expanded pitch range that is typical of a word under narrow focus. Also in keeping with the narrow focus, the pitch range of the following part of the whole utterance is noticeably compressed.

In a few cases, both the first verb and the negation morpheme bu4 have the prominence of narrow focus. Figure 3.20 shows an expanded pitch range on both the verb mai4 and the negation morpheme bu4 with a reduced pitch range for the following part of the utterance. We can see the lowered tonal target of the verb mai4 and the highly raised starting point of the fall in the syllable bu4. The expanded pitch range on these two syllables can be compared with the “normal” pitch range of the pre-focused syllables Li3 Li4.
Figure 3.20. A-not-A question: narrow focus on both first verb and bu4 [Subject Q]:

\textit{Li3 Li4 mai3 bu4 mai3 zhe4 liang4 che1? “Is Li Li buying this car?”}
The intonation patterns of the A-not-A question and the neutral *ma*-particle question suggest that the former is syntactically verb focused whereas the latter is compatible with broad focus on the proposition as a whole. That is, the prosodic prominence on the verb (or on both verb and negation morpheme) in the A-not-A question shows that it is an inherently verb-centered question. It asks about the verb or predicate rather than the whole sentence. On the other hand, the neutral *ma*-particle question is syntactically more ‘neutral’ than the A-not-A question in that it is broad focused. To understand the function of the A-not-A question, we can compare the answer to the A-not-A question with that to the corresponding neutral *ma*-particle question. For example, the positive answer to the neutral *ma*-particle question *Ni3men0 mai4 yang2rou4 ma0? “Do you sell mutton?” would be *shi4de0 ‘Yes’. However, the positive answer for the A-not-A question *Ni3men0 mai4 bu4 mai4 yang2rou4? should contain the verb *mai4* since the question asks about the verb. (For that reason, A-not-A questions are often referred to as V-not-V questions in Chinese grammar.) The difference in response shows that the neutral *ma*-particle question is broad focused while the A-not-A question is basically verb-focused.\(^{25}\)

If compare the A-not-A question with non-neutral *ma*-particle questions, we can find another prosodic difference between A-not-A questions and *ma*-particle questions. Whereas the prosody typically reflects the function of the A-not-A question as a verb-focused question, there are various ways to manipulate the intonation in the *ma*-particle question: manipulation of boundary tones, expansion of pitch range, different gradient of a rising trend, and narrow focus prosody on different elements of

\(^{25}\) I am grateful to Mary Beckman for suggesting this analysis.
the ‘base’ sentence. It seems likely that the prosodic manipulations in the \textit{ma}-particle question pertain to the pragmatic effects of the question.
Figure 3.21. Intonational manipulations in Subject W's *ma*-particle questions:

*Ni3men0 ma4 y4ng2rou4 ma0*? "Do you sell mutton?"

- A ——— incredulity *ma*-particle question
- B _______ neutral *ma*-particle question
- C ........ confirmation-soliciting *ma*-particle question
Figure 3.21 shows the varied intonation of the same *ma*-particle question in three different contexts. While B is neutral, A and C are not. A is an incredulity question, and C is a confirmation-soliciting question. (Questions A and C were elicited in the Contexts A and C listed above in section 3.1.1.) These prosodic manipulations and their correlation with pragmatic effects in non-neutral *ma*-particle questions will be discussed in more detail in the following section.

3.2.3 Intonation Patterns in Non-Neutral *Ma*-Particle Questions

In this section, the prosodic manifestation of non-neutrality for *ma*-particle questions will be addressed. The patterns will be discussed in comparison with that of the neutral *ma*-particle question.

3.2.3.1 *Ma*-Particle Questions with Mild Positive Presupposition: Confirmation-Soliciting

When a *ma*-particle question implies a mild positive presupposition, it is usually uttered to elicit confirmation. In this type of question, the speakers show two different intonation patterns. Subjects Q and L tend not to manipulate the intonation. As a result, the intonation is very similar to that of the neutral *ma*-particle question. Figures 3.22 (for Subject Q) and 3.23 (Subject L) present the similar intonation patterns in these two types of *ma*-particle questions.

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Figure 3.22. Overlaid F0 contours for confirmation-soliciting *ma*-particle question and neutral *ma*-particle question [Subject Q]:

*Ni3 shuo1 ri4 wen2 ma0? “Do you speak Japanese?”*

---------- confirmation-soliciting *ma*-particle question
______ neutral *ma*-particle question
Figure 3.23. Overlaid F0 contours for confirmation-soliciting *ma*-particle question and neutral *ma*-particle question [Subject L]:

*Ni3 shuo1 ri4 wen2 ma0? “Do you speak Japanese?”*

---------- confirmation-soliciting *ma*-particle question
_______ neutral *ma*-particle question
The other intonation pattern is observed from Subject W. As noted in Figures 3.5-3.8, we observe a local fall on the *ma*-particle in her confirmation-soliciting *ma*-particle questions. This was particularly clear in Figure 3.6.

As seen in Figure 3.6, this subject tends to lower the pitch on the *ma*-particle, and this local fall clearly contrasts with a local rise on the *ma*-particle in the neutral question. Therefore, we posit a low boundary tone in this type of her *ma*-particle questions. And we do not see any clear rising trend. In addition, there is narrow focus realized on the syllable *ri4*.

The possible reasons for the variation that Subject W shows in this type of questions need further investigation. It may be idiosyncratic or reflect characteristics of the regional variety of Mandarin spoken in Taiyuan, Shanxi Province, where she was born and raised.\(^{26}\) To clarify the causes or this variation, we need more experimental research based on a large corpus of data from many more speakers.

### 3.2.3.2 *Ma*-Particle Questions with Mild Negative Presupposition: Incredulity

The *ma*-particle questions with a mild negative presupposition often express a speaker's uncertainty or incredulity about the situation. In this type of question, we observe two kinds of intonational manipulation that consistently occur across the subjects: expansion of pitch range and a general rising trend. In addition, a high boundary tone or narrow focus can be realized.

\(^{26}\) She graduated from a college in Taiyuan before moving to Beijing. She also spoke the Taiyuan dialect of Mandarin with her father when she was young.
Figure 3.24 presents Subject L’s incredulity question in comparison with his neutral ma-particle question. First, owing to the expanded pitch range, the high pitch targets in the incredulity question are higher than those in the neutral question. Second, the overall intonation is gradually raised. We can see that the difference in pitch becomes bigger toward the end of the utterances and that the high tonal target on yang2rou4 is higher than that on ni3men0 mai4. Third, we observe that a local rise is realized on the ma-particle reflecting the presence of a high boundary tone.
Figure 3.24. Overlaid F0 contours for incredulity ma-particle question and neutral ma-particle question [Subject L]:

Ni3mələd mədəi yangətə fədəl? “Do you (pl.) sell mutton?”

...... incredulity ma-particle question

neutral ma-particle question
The similar manipulations are shown in the incredulity question uttered by Subject W. The utterance is compared with the neutral question in Figure 3.25.
Figure 3.25. Overlaid F0 contours for incredulity *ma*-particle question and neutral *ma*-particle question [Subject W]:

*Ni3men0 mai4 yang2rou4 ma0?* “Do you (pl.) sell mutton?”

........ incredulity *ma*-particle question
______ neutral *ma*-particle question
In Figure 3.25, we can observe that the high tonal targets are raised in the incredulity question by the expanded pitch range. Also, we see that the difference of pitch between the two utterances becomes bigger as it goes toward the end of the utterance because of the generally rising trend. Note that the high pitch at the starting point of the fall of *rou4* is even higher than that of *mai4*. This is thought to be the effects of the general rising trend of the intonation and the expanded pitch range.

3.2.3.3 *Ma*-Particle Questions with Strong Positive Presupposition: Accusation

The rhetorical *ma*-particle question with a strong positive presupposition is often uttered to accuse the hearer of something. Interestingly, as in the incredulity questions, the pitch range is expanded, and the intonation has a rising trend in the accusation *ma*-particle questions. Furthermore, narrow focus and a high boundary tone are realized across the three subjects. Figure 3.26 shows Subject W’s accusation question.
Figure 3.26. Overlaid F0 contours for accusation *ma*-particle question and neutral *ma*-particle question. [Subject W]:

Ni3 shuo1 ridwen2 ma0? "Do you speak Japanese?"
As seen in Figure 3.26, while the pitch on \textit{ni3} in the accusation question is lower than that of neutral question, the pitch on \textit{shuo1} is higher than that in the corresponding neutral question. Therefore, it seems that the overall pitch range of the accusation question is expanded. Moreover, observing that the low pitch target of the first syllable \textit{ni3} is much lower than the starting point of \textit{wen2}, we can see a rising trend of the intonation in the accusation question. Also, we see the dramatically expanded pitch range on the syllables \textit{ri4wen2} 'Japanese'. It is seems to be because of the effects of the extremely expanded overall pitch range and the exaggerated rising trend in the accusation question. Besides, there is a local rise on the \textit{ma}-particle by the effect of the high boundary tone.

The male speaker's accusation question shows the similar intonation pattern, as can be seen in Figure 3.27.
Figure 3.27. Overlaid F0 contours for accusation *ma*-particle question and neutral *ma*-particle question [Subject I.]:

*Li3 Li4 mai3 she4 liang4 che4 ma0? “Is Li Li buying this car?”*

.......... accusation *ma*-particle question
_____ neutral *ma*-particle question
Comparing the accusation question and the corresponding neutral question in Figure 3.27, we can see the pitch range expansion and the rising trend of the intonation. Also, narrow focus is on zhe4 ‘this’ to imply that this car should be the last one that Li Li purchases. In addition, we observe that a high tone of the syllable che4 is leveled out on the ma-particle by the effect of a high boundary tone.

With regard to the expansion of the pitch range and the rising trend of the intonation, we observe that they are involved in both the accusation question and the incredulity question. Then, we need to see how they are realized in these two types of questions. Figure 3.28 presents the comparison of the two intonation patterns.
Figure 3.28. Overlaid F0 contours for accusation *ma*-particle question and incredulity *ma*-particle question [Subject W]:

*Ni3 shuo1 ri4wen2 ma0? “Do you speak Japanese?”*

........... incredulity *ma*-particle question
_____ accusation *ma*-particle question
In Figure 3.28, we can observe that the pitch range is extremely expanded in the accusation question, and the rising trend of the accusation question is sharper than that of the incredulity question. In this regard, it seems that the degree of the manipulation is different in these two types of questions, although the type of manipulation is the same. The different degree of global manipulation is also seen in another pair of the same subject's accusation question and incredulity question in Figure 3.29.
Figure 3.29. Overlaid F0 contours for accusation *ma*-particle question and incredulity *ma*-particle question [Subject W]:

*Ni3 men0 mai4 yang2rou4 ma0?* “Do you sell mutton?”

..... incredulity *ma*-particle question
_____ accusation *ma*-particle question
3.2.3.4 *Ma*-Particle Questions with Strong Negative Presupposition: Denial

The rhetorical *ma*-particle question with a strong negative presupposition can be uttered to deny a certain possibility. This is an indirect assertion. In this kind of *ma*-particle questions, we observe that narrow focus is consistently realized. However, it seems that neither a general rising trend nor the expansion of the overall pitch range is realized. That is, there is no obvious global manipulation of the intonation. In addition, a boundary tone seems not to occur. Figure 3.30 shows the characteristics of the intonation of this type of rhetorical *ma*-particle question. We can compare Subject L’s denial question with his corresponding neutral question.
Figure 3.30. Overlaid F0 contour for denial *ma*-particle question and neutral *ma*-particle question [Subject L]:

*Nǐ shuō lǐ mā?* “Do you speak Japanese?”

.. denial *ma*-particle question

.. neutral *ma*-particle question
As seen in Figure 3.30, the speaker denies any possibility that the hearer can *speak* Japanese by narrow focusing *shuol* 'speak'. It is seen that the pitch range of the following part of the utterance is noticeably compressed. In addition, there is neither a local rise nor a fall realized on the *ma*-particle. Therefore, we do not posit any boundary tone in this case.

Another question uttered by Subject Q shows narrow focus on *mai4* 'sell' with the following pitch range reduced. This manipulation is to assert that the hearer *does not sell* mutton. As in Figure 3.30 above, we do not see any global manipulation of the intonation in Figure 3.31. Besides, there seems to be no effect of a boundary tone in that there is neither a local rise nor a local fall on the *ma*-particle.
Figure 3.31. Overlaid F0 contours for denial ma-particle question and neutral ma-particle question [Subject Q]:

Ni3men0 mai4 yang2rou4 ma0? “Do you sell mutton?”

........ denial ma-particle question
_____ neutral ma-particle question
3.3 Concluding Remarks

The results of the experiment on intonation patterns of *ma*-particle questions show that neutrality and the various types of non-neutrality for *ma*-particle questions are prosodically manifested.

In the intonation patterns of neutral *ma*-particle questions, we see both global manipulations and a local rise on the *ma*-particle. As for the global manipulations, while neutral *ma*-particle questions typically show a generally rising trend over the whole utterance, some utterances present merely an overall-raising. As noted in section 2.2.1, a rising intonation and an additional rise on *ma*-particle were both noted by Chao in two separate studies (Chao 1933a, 1968). However, revising his early description of ‘interrogative intonation’ as a rising intonation on the entire utterance (1933a), Chao defines the intonation pattern of *ma*-particle questions as having a local rise on the *ma*-particle in his later work (1968). Therefore, he does not explain how both global and local manipulations are realized in the intonation of *ma*-particle questions. Even in later instrumental studies, little attention has been paid to the interaction between these two types of intonational manipulation. That is, although the experimental results in Ho (1977) and Gårding (1987) confirmed Chao’s early observation of a rising trend for question intonation, a local rise on the *ma*-particle has not been observed in instrumental work prior to this thesis.

The present study observes that a general rising trend of the intonation and a local rise on the last syllable are also realized in echo-questions. Due to the similarity of the overall intonation patterns, Shen (1990) treated these two as having the same
‘tune’. By contrast, some studies have observed an intonational difference between the
two, which was posited to be a difference between non-rising intonation in ma-particle
However, the experimental results of this study show that the major difference
between the two intonation patterns is not a difference in kind but a different gradient
for the rising trend of the intonation. That is, while a rising trend of the intonation and
a local rise at the end of the utterance can be realized in both types of questions, the
rising trend is exaggerated in echo-questions.

In addition to the above observations, we note that the functional difference
between A-not-A questions and ma-particle questions is reflected in their intonation
patterns. That is, narrow focus is consistently realized on the first verb in the A-not-A
question to manifest its function as a verb-focused question. This prosodic
characteristic suggests that the neutral ma-particle question is more neutral than the A-
not-A question for the reason that it can be broad focused.

With the intonation of neutral ma-particle questions understood, we have
examined the intonation patterns in non-neutral ma-particle questions. Although Shen
(1990) states that any kind of prosodic manipulation evoked by non-neutrality is
superimposed onto the basic pattern of neutral intonation, the experimental result of
the present study rather confirms Chao’s observation (1933a, 1968) that a particular
intonation pattern is associated with a certain type of modality. In this regard, while
Chao focuses on the relationship between ending pitch pattern and modality, we
observe that global as well as local manipulations are involved in the intonation
patterns of non-neutral *ma*-particle questions. For example, according to Chao, the incredulity question has a rising ending pitch. Nonetheless, he does not explain how this ‘rising ending’ is distinct from that of neutral *ma*-particle question. Observing the global pattern of intonation as well as the local rise at the end in incredulity questions, the present study finds that the pitch range of the general rising intonation is expanded in incredulity questions. Therefore, the ending pitch is highly raised not only by a local rise at the end of the utterance but also by these global manipulations of the intonation. Likewise, we observe that a considerably high pitch on *ma*-particle in accusation questions is related to the effect of the expansion of the pitch range and the exaggerated rising trend as well as the local rise on *ma*-particle itself. The observations on the relationship between the ending pitch and modalities shown in Liu et al. (1983) and Hu (1991) do not consider global manipulations of the intonation.

In addition to a local rise on *ma*-particle, we treat narrow focus as another kind of local manipulation. As noted in Lyu (1985), we observe that different alignment between the prosodic prominence associated with narrow focus and a syntactic constituent changes the interpretation of the *ma*-particle question. However, whereas he only demonstrates the use of narrow focus for contrastive purposes, this study suggests that narrow focus is involved also in the prosodic manipulations to express a speaker’s presupposition. Furthermore, it is observed that the stronger a presupposition is, the more likely a speaker is to put narrow focus on a certain constituent in the utterance.
CHAPTER 4

CONCLUSION

This thesis investigated the pragmatics and intonation of *ma*-particle questions in Mandarin. By considering the pragmatic implications of *ma*-particle questions in different contexts, we find that *ma*-particle questions can be either neutral or non-neutral and that the polarity and degree of non-neutrality can vary in discourse. More importantly, the intonation of *ma*-particle questions is manipulated to manifest the neutrality or type of non-neutrality. The present study observes that such things as the general trend of the backdrop pitch, the overall pitch range, the presence and type of boundary tones, and focus-related prosodic prominence are manipulated to signal different pragmatic meanings for *ma*-particle questions.

In observations on boundary tones, we identified two boundary tones that roughly correspond to a Rising Ending and a Falling Ending in Chao (1968). Since we posit boundary tones to account for a local rise or a local fall on the *ma*-particle or other last syllable of the utterance, we will not use a low boundary tone to denote a downtrend due to the presence of a less local final lowering or downstepping in the denial *ma*-particle questions as well as in declarative sentences. Therefore, in fact there is a three-way distinction in the pitch on the *ma*-particle: ‘high’ pitch because of
a high boundary tone, ‘low’ pitch because of “normal” final lowering, and an even ‘lower’ pitch because of a low boundary tone. The complete three-way distinction of pitch on the *ma*-particle is shown in the utterances produced by one subject. The other two subjects showed just two of the three possibilities. This inter-subject difference may mean that some speakers of Mandarin have three-way contrast of ending pitch among *ma*-particle questions and others do not, or simply that the particular base sentences and contexts were not conducive to eliciting all three types in the varieties of Mandarin spoken by the three subjects. Thus, we need further investigation on the effects of boundary tones and possible variations of boundary tones across varieties of Mandarin.

In addition to boundary tones, focus-related prosodic prominence affects the local pitch range. We observe that the stronger the non-neutrality in the question, the more consistently speakers narrow focus a certain constituent. Importantly, not only do the localized effects of boundary tones and prosodic prominence interact with each other, but they also interact with the global manipulations of intonation.

In many neutral *ma*-particle questions, we observe that a high boundary tone is realized on the general rising trend of the intonation. This can be presented in comparison with the level trend of the intonation of broad focused declarative sentences in Figures 4.1 and 4.2.
Figure 4.1 level trend in broad focused declarative sentences

Figure 4.2. rising trend with high boundary tone in neutral *ma*-particle questions

In addition to declarative sentences, 'denial' *ma*-particle questions and some 'confirmation-soliciting' *ma*-particle questions also show a level trend of the intonation. However, different local manipulations are realized in these two types of *ma*-particle questions. That is, while focus-related prosodic prominence is realized in the 'denial' *ma*-particle question, there is a low boundary tone that functions at the right edge of 'confirmation-soliciting' *ma*-particle questions, as in Figures 4.3 and 4.4.
The general trend of the intonation can be modified by producing an overall rise in pitch for one of two contrasting intonation patterns, by producing a different gradient of the rising trend in two overall rising intonations, or by a global pitch range expansion. These manipulations can be combined or produced alone. For example, compared to the intonation of declarative sentences, the overall intonation is raised in some neutral ma-particle questions. As a result, the intonation is level but raised, as in Figure 4.5. (where --- is the general trend of the intonation of declarative sentences).
Figure 4.5. raised-level trend with high boundary tone in some neutral *ma*-particle questions.

Again, the gradient of a rising slope can be varied without changing the starting level. The intonation pattern of echo-questions shows that while it has a rising trend and a high boundary tone, as in neutral *ma*-particle questions, its rising trend is exaggerated. This is presented in Figure 4.6 (where --- is the general trend of the intonation of neutral *ma*-particle questions.)

Figure 4.6. exaggerated rising trend with high boundary tone in echo-questions
From the observations of the intonation patterns of 'incredulity' ma-particle questions and 'accusation' ma-particle questions, we see that not just the rising trend is exaggerated, but also the overall pitch range is expanded. Furthermore, as presented in Figures 4.7 and 4.8, comparing these two types of questions, we observe that the rising trend is even more exaggerated and the pitch range is also dramatically expanded in 'accusation' ma-particle questions (where --- is the general trend of the intonation of neutral ma-particle questions).

![Diagram](high boundary tone)

Figure 4.7. exaggerated rising trend with expanded pitch range in incredulity ma-particle questions
Figure 4.8. exaggerated rising trend with extremely expanded pitch range in accusation \textit{ma}-particle questions.

To understand how native speakers of Mandarin perceive the different degree of similar global manipulations of the intonation in ‘incredulity’ and ‘accusation’ \textit{ma}-particle questions, we need further perception studies. In addition, further investigation of other prosodic cues to distinguish ‘accusation’ from ‘incredulity’ needs to be conducted.

As shown above, this study suggests that neutrality and various types of non-neutrality of \textit{ma}-particle questions are manifested by different interactions of localized effects of boundary tones and prosodic prominence with global manipulations of the intonation. Although substantial further research is necessary to fully understand the intonation patterns of \textit{ma}-particle questions, this study provides new findings about the relationship between the pragmatics and prosodic manipulations of \textit{ma}-particle
questions in discourse. Furthermore, the present study suggests a new approach to investigate the pragmatics of sentence-final particles and their interaction with intonations in Mandarin.
APPENDIX

THE SETS OF CONTEXTS

The five sets of contexts used to elicit non-neutral ma-particle questions in the experiment are provided in Sets 1 through 5.

[Set 1]

A. Incredulity:

Whenever S goes to a butcher shop to buy mutton, they (i.e., butcher and other people working there) say it won’t be available until next time. One day, S went to the market to buy some other food and dropped by the butcher’s shop since the butcher shop is in the market. To inquire again as to whether they have mutton or not -- although she knows it is very unlikely that they have it -- S asks “Ni3 men0 mai4 yang2 rou4 ma0?” “Do you sell mutton?”

B. Denial:

S is a regular customer of a certain butcher shop. However, since they don’t sell mutton, S went to another butcher shop to buy it. On her way home, she happened to meet the butcher from that meat shop (or a person working there). The butcher saw S buy some meat at a butcher shop other than his, and asked her why she (S) didn’t buy meat in his shop. S says in reply “Ni3 men0 mai4 yang2 rou4 ma0?” “Do you sell mutton?”

C. Confirmation-Soliciting:

S entered a butcher shop. S/he glanced at a price list hanging on the wall that says that mutton is available today. The butcher asked. “What would you like today?” To make sure they have mutton, s/he asks “Ni3 men0 mai4 yang2 rou4 ma0?” “Do you sell mutton?”

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D. Accusation:

*S* is an animal lover (needless to say, a vegetarian) who is worried about the decreasing population of sheep. *S*’s friend who owns a restaurant asked *S* to drop by his/her restaurant to eat fresh mutton. Surprised and angry, *S* says “*Ni3 men0 mai4 yang2 rou4 ma0?*” “Do you sell mutton?”

[Set 2]

A. Incredulity:

*S* hasn’t seen *H* study or speak Japanese, and hence thinks that *H* does not speak it. One day, during a conversation with *H*, *S* realizes that *H* has a lot of Japanese friends. Astonished, *S* says, “*Ni3 shuo1 ri4wen2 ma0?*” “Do you speak Japanese?”

B. Denial:

*S* is a learner of Japanese. *H* does not know Japanese. When *S* gets a bad grade in his/her Japanese class, *H* annoys *S* by offering his/her own analysis as to why *S* didn’t get a good grade. *S* gets upset with *H* for poking his/her nose into something that s/he knows nothing about, and so says to *H*, “*Ni3 shuo1 ri4 wen2 ma0?*” “Do you speak Japanese?”

C. Confirmation-Soliciting:

*S* is a learner of Japanese. While studying Japanese in the library, *S* has a couple of puzzling questions. Noticing that one person is reading a text written in Japanese, *S* goes over to his table to ask him some questions about Japanese. Before s/he asks those questions, *S* says “*Ni3 shuo1 ri4 wen2 ma0?*” “Do you speak Japanese?”

D. Accusation:

*S* is a learner of Japanese. *S* had a hard time making himself/herself understood while talking on the telephone in Japanese. As a result, such conversations were not very successful. Next day, *S* heard from one of her friends that *H*, *S*’s new roommate, speaks Japanese fluently. *S* is upset that *H* did not help him/her at all since *H* was in the room while *A* was talking on the phone. So, *S* says to *H* “*Ni3 shuo1 ri4wen2 ma0?*” “Do you speak Japanese?”

[Set 3]

A. Incredulity:

*S* and *A*, Li Li’s friends, went to a car dealership to help her buy a car. They arrived there earlier than Li Li. Pointing to one car among a lot of new cars, *A* said “Li Li wants to purchase this car.” However, *S* doubts it since the price seems to be much
higher than Li Li can afford. So, S curiously asks “Li3Li4 mai3 zhe4 liang4 che1 ma0?” “Is Li Li buying this car?”

B. Denial:
Li Li, and her two friends, A and S, went to a car dealership. While they were going there, A kept talking about the car that he thinks is the best one for Li Li. However, when A showed them the car, they (S and Li Li) realized that it is too luxurious for Li Li to buy. It is out of the question for her to afford it. When S saw its price, he says to A, “Li3Li4 mai3 zhe4 liang4 che1 ma0?” “Is Li Li buying this car?”

C. Confirmation-Soliciting:
In a car dealership, A and S are supposed to meet Li Li to help her purchase a car. Having arrived there earlier than Li Li, they went to the place where the car that Li Li wants to buy was displayed. Pointing to the car that Li Li always says she will buy, S says “Li3Li4 mai3 zhe4 liang4 che1 ma0?” “Is Li Li buying this car?” to make sure.

D. Accusation:
A is Li Li’s younger sister. One day, she showed her mother a brochure advertising the car that Li Li will be buying. Being very upset about its high price, her mother says “Li3Li4 mai3 zhe4 liang4 che1 ma0?” “Is Li Li buying this car?”

[Set 4]

A. Incredulity:
A invited S and Ouying to his house for dinner. S arrived there earlier than Ouying and saw A put a bottle of Wuliangye on the table. Since Ouying looks so skinny and weak, S does not believe Ouying can really enjoy drinking such strong alcohol. So, S asks to A “Oul ying1 he1 wu3 liang2 ye4 ma0?” “Does Ouying drink Wuliangye?”

B. Denial:
A was drinking strong alcohol secretly. One day, S, his wife, found that he had a bottle of Wuliangye. To avoid being criticized, A made up some excuse in a hurry and said that he bought it for Ouying, his friend. However, since S knows that Ouying can’t even drink a glass of beer, she is upset and says “Oul ying1 he1 wu3 liang2 ye4 ma0?” “Does Ouying drink Wuliangye?”

C. Confirmation-Soliciting:
S is trying to buy some alcohol for Ouying. S knows that Ouying very much likes drinking strong alcohol of over 60 proof. Although S is pretty sure that Ouying will like Wuliangye as well, s/he wants to make sure. So, before s/he buys it for
Ouying, S asks of A, Ouying’s close friend, “Ou1 ying1 he1 wu3 liang2 ye4 ma0?” “Does Ouying drink Wuliangye?”

D. Accusation:

Ouying’s mother visited his house. When she entered the house, she saw an empty bottle of Wuliangye on the table. And Ouying had already gotten drunk. His mother is upset that Ouying does not listen to his doctor and still drinks strong alcohol. Looking angrily at her son, she says to Ouying’s wife “Ou1 ying1 he1 wu3 liang2 ye4 ma0?” “Does Ouying drink Wuliangye?”

[Set 5]

A. Incredulity:

S is a new babysitter for A’s baby, Lingling. In the market, A and S are buying some food and something to drink for Lingling. A explains what Lingling needs to eat everyday. When A buys one bottle of milk for Lingling, S thinks one bottle may be too much for such a little baby to drink for one day. So S asks “Ling3 ling3 he1 yi1 ping2 niu1 nai3 ma0?” “Is Lingling drinking a bottle of milk?”

B. Denial:

S is Lingling’s mother. A, Lingling’s babysitter, told S that Lingling drinks a whole bottle of milk everyday. But, one day, S happened to see that her baby only drinks a bit of milk and A drank most of it. Upset about A’s lying, S says to A “Ling3 ling3 he1 yi1 ping2 niu1 nai3 ma0?” “Is Lingling drinking a bottle of milk?”

C. Confirmation-Soliciting:

S is a new babysitter for Lingling. On the first day of her babysitting, she checked the list of what Lingling eats or drinks every day. To make sure, S asks Lingling’s mother “Ling3 ling3 he1 yi1 ping2 niu1 nai3 ma0?” “Is Lingling drinking a bottle of milk?” before she picks up a bottle of milk at the store.

D. Accusation:

Lingling has been sick for several days. S, Lingling’s mother, realized that it is because her baby drinks too much milk. Upset about A’s feeding too much milk to her baby, S asks A “Ling3 ling3 he1 yi1 ping2 niu1 nai3 ma0?” “Is Lingling drinking a bottle of milk?”
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