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A Variationist Study of Prosodic Focus in Naturally Occurring Interactions: the Case of the Negative "*-nai*" in Hokkaido Japanese[1)]

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北海道方言話者の日常会話における韻律強調のヴァリエーション研究：否定辞「ーない」の場合

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要旨：本稿では，言語変異理論(Variation Theory)の枠組みを用いて，否定辞「ーない」に付与される，韻律強調の変異に内在する規則性を明らかにすることを目的とする。韻律強調に関する従来の研究の問題点として，西欧諸語（特に英語）偏向と相互行為的(interactional)側面の軽視を指摘した上で，日本語特有の韻律構造から派生する様々な制約条件，言語運用脈絡(context)ごとに会話参与者が構築する否定表現の対人交渉的意味，さらには，統語と韻律の連携といった談話文法的視点を加味した多変量解析を試みる。分析の結果，これまで主に西欧諸語を土台として，韻律強調の起因を談話の情報構造に求める見解は，日本語の当該事象においては有効でないことが明らかになった。むしろ日本語においては，否定辞「ーない」をとりまく韻律構造が確固とした影響力，とりわけ韻律強調を抑制する効力を発揮し，一方，否定表現の対人交渉的側面や談話文法的作用が，強調を促進する働きをすることが判明した。資料として，北海道方言話者（20代女性6名）による一対一の日常会話を三組録音し，ToBIシステムを応用して強調の判別を行った。

Key Words: focus, prosody, variation theory, negation, talk-in-interaction, Hokkaido Japanese

1. Introduction

Focal prominence in naturally occurring interactions is such a variable phenomenon that capturing its underlying principles is extremely difficult. Despite a great deal of recent progress in obtaining quality sound and conducting acoustic measurements and transcriptions (Beckman et al., to appear), a surprisingly small amount of theoretical attention has been paid to the analysis of focal prominence in prior research on prosodic events. It then follows that no satisfactory conclusion has been drawn as to why and how the speaker places prosodic focus on certain elements of an utterance (Ladd, 1996). A major universalist view put forth thus far is concerned with information structure in discourse, proposing that an entity which has a newly introduced significant status in prior context of a discourse tends to be given prosodic focus (Prince, 1981; Brown, 1983; Grosz & Sidner, 1986; Nooteboom & Kruyt, 1987; see particularly Cutler et al, 1997). This generalization, however, may be refuted at least on the following two grounds, which the present study aims to verify:

1) Prior studies neglect a great deal of cross-linguistic variability involved in focal prominence phenomena and suffer from being English-centric (Ladd, 1996; Yaeger-Dror, 2002a, b);
2) Prior studies are mainly based on the reading of constructed sentences out of context or on a monologue-reading in a laboratory setting, where the dynamic interactive roles prosody is supposed to play in face-to-face exchanges are not taken into account (Couper-Kuhlen & Selting, 1996).

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The present study aims to account for the principles underlying variability in Japanese focal prominence observed in naturally occurring interactions. Adopting a variationist approach to linguistic variation, the study attempts to reveal "orderly heterogeneity" of the variable phenomena, focusing on two particular types of constraints (Weinreich et al., 1968): language-specific prosodic principles and interactive parameters manipulated by the speaker at every moment of talk-in-interaction. To investigate how dynamically (and systematically) focal prominence operates in interactive language use, the study particularly focuses on the phase of face-to-face exchanges that requires highly interactive work: negation. The particular locus of analysis is variable manifestation of focal prominence placed on the Japanese negative "*-nai,*" in which the speaker seems to manipulate differential degrees of focal prominence, depending on the social meanings of negation at every moment of talk-in-interaction.

In order to reach a better understanding of how variable uses of focal prominence in everyday interactions are governed by sociolinguistic grammar[2] one needs to figure out the matrix of potential constraints on variability and their co-occurrence restrictions (Terken, 1997). The variationist framework of analysis (i.e., the variable rule approach) allows one to detect potential constraints that simultaneously influence observed variability in focal prominence and to account for the relative significance of the constraints responsible for the variation (i.e., the hierarchy of constraints) (Sankoff, 1986; Preston, 1991). The specific types of constraints to be investigated in the present study include the structural environment (i.e., the structural principles of Japanese prosody) in which the negative "*-nai*" is embedded, the status of information conveyed by the negative in a discourse as is advanced in prior studies, particular interactive work in interpersonal exchanges (Schegloff et al., 1977) and the speaker's stance or footing of negation (Goffman, 1981).

Three casual same-sex conversations between close friends served as analytical data. The data were transcribed, and all the utterances involving the negative "*-nai*" were analyzed prosodically, based roughly on the Japanese ToBI system (Venditti, to appear) (see Section 5).

2. Previous Work on Focal Prominence

According to Ladd (1996), there have been two major theoretical stances that account for phenomena of focal prominence in prosody. The first stance resorts to "highlighting-based" accounts (Ladd, 1996: 163), in which focal prominence plays a pragmatic role, being typically given to the words or phrases of relatively heavier semantic weight than the others in an utterance. Any entity, which has a new salient status in the flow of discourse, tends to be pronounced with focal prominence, whereas entities that seem to provide old, previously mentioned, or insignificant information are likely to be de-emphasized prosodically. Though this generalization is meant to establish the "universalist" principles that can apply to any human language, it can be criticized as "English-centric" in that there is abundant evidence of cross-linguistic variability (Ladd, 1996: 168–97). This stance takes into serious account such pragmatic notions as discourse salience or speaker intentions, but is lacking in attention to potential structural constraints (i.e., language-specific patterns of accents and intonation) on the realization of focal prominence.

The other stance centers on what Ladd (1996: 163) calls "structure-based" accounts, in which focal prominence is subject to the prosodic structure unique to each individual language, thus "non-universal" phenomena. It emphasizes the rule-governed nature or autonomy of patterns of focal prominence in natural speech. Once the focused element of the utterance is specified, the prosodic pattern of the rest is predictable by language-specific rules or structural principles. However, a variety of contextual incentives that may cause the speaker to choose certain elements of the utterance on which to place focal prominence are "at best poorly understood," and more research from interactional

perspectives is vital (Ladd, 1996: 164, 197–99).

In Japanese language context, research on focal prominence was heavily concerned with its relationships with the phonological properties of the utterance (especially with lexical accents) from the very beginning of investigation (Hattori, 1933; Kindaichi, 1951; Kawakami, 1957, 1965; Oishi, 1959; Wada, 1975). Recent studies have been most active in the field of laboratory phonology, and have advanced non-universal principles specific to Japanese. Sugitoo (1985, 1986), for example, provides empirical evidence that disproves the highlighting-based accounts like Cutler's (Cutler et al., 1997; and papers cited there) or the studies summarized in Hirst and Di Cristo (1998). Sugitoo found that the word providing new information in a discourse is unlikely to be produced with pitch (Fo or fundamental frequencies) prominence by native Japanese speakers, whereas speakers of western languages emphasize such words with much higher pitch than the words providing old information. Instead, in Japanese, a significant correlation has been found between focus and its syntactic position. Focal prominence is placed typically on whichever content words located in the utterance-/phrase-initial position, regardless of the information status they represent in a discourse (Sugitoo, 1985, 1986; similar claims in Koori, 1989ab).[3)]

In connection with this positional constraint on the realization of focal prominence in Japanese, there are also other language-specific characteristics of Japanese prosody that I see may be relevant to the phenomena: downstep (or catathesis) (Beckman & Pierrehumbert, 1986; Pierrehumbert & Beckman, 1988; Kubozono, 1989; Azuma, 1993; Venditti, to appear) and degenerated accents toward the end of the utterance (Maekawa, 1994; Koori, 1989b; Venditti, to appear). Downstep is a gradual pitch decline and narrowing typically seen in standard Japanese read sentences. Within the intonation phrase as the identifiable unit, the pitch range of the succeeding accentual phrase(s) becomes narrower when preceded by the accented phrase. It is claimed that focus blocks this propagation of downstep and functions to reset the pitch range, introducing a new prosodic boundary (with either medium or strong disjuncture). Degeneration of lexical accents is commonly observed toward the end of the utterance (or the intonation phrase). Toward the right edge of the intonation phrase, lexical accents are likely to be weakening due to creaky voice or amplitude lowering. Consequently, pitch movement is highly leveled, which characterizes finality contours. It is likely that prevalent phenomena of downstep and de-generation of accents create an antagonistic phonological environment for the realization of focal prominence in Japanese speech production.

Researchers have also discussed formal relationships between lexical accents and focal prominence. Some argue that accentual patterns as a lexical property in Japanese tend to be maintained rigidly even when focal prominence is realized (Hattori, 1933; Sugitoo, 1982, 1986). Thus, variable manifestations of focal prominence are closely linked to the accentual types of Japanese lexicon (i.e., *kifuku-shiki* 'accented' or *heiban-shiki* 'unaccented') (Shibata et al., 1980; Pierrehumbert & Beckman, 1988). In implementing focal prominence on accented words, the speaker takes advantage of the inherent accentual pattern of the words to amplify the magnitude of focal prominence; with unaccented words, on the other hand, the manifestation of focal prominence is likely to be less conspicuous (Sugitoo, 1982, 1985, 1986; Koori, 1997b). Other researchers, on the other hand, argue that the patterns of lexical accents are readily violated by focal prominence in several different ways (Oishi, 1959; Kawakami, 1965; Fujisaki et al., 1984). Examining realizations of focal prominence in connected speech, these studies demonstrate that factors such as combinations of the accentual patterns of the word in focus and its adjacent words, and focus on postpositional particles and auxiliary verbs, interact with one another and all affect the intonational patterns of the utterance as a whole. Focal prominence is not only constrained by the prosodic environment in which focal entities are embedded, but also strongly affects the shape of intonation of the whole utterance as well as the accentual patterns

of the words preceding and succeeding the word in focus (Koori, 1989b).

What has been reviewed so far clearly suggests that patterns of focal prominence in Japanese should be constrained by the language-specific structural environment in which it takes place. As Terken (1997) states, to figure out this complex matrix of structural constraints on its systematicity is one of the vital questions which needs to be tackled in studies of focal prominence, and the present study attempts to do so.

3. Previous Work on Interactive Dimensions of Focal Prominence

The data analyzed in past studies on focal prominence are derived predominantly from speech produced in non-interactive contexts (e.g., the reading of sentences in isolation or monologues). Given a wide variety of studies that show how dynamic the roles of prosody are in talk-in-interaction (Gumperz, 1980; Couper-Kuhlen & Selting, 1996), consistently the main unsolved problems in intonational phonology arise from examining "citation forms" (i.e., socially de-contextualized sentences) to try to determine how sentences are focused (Ladd, 1996: 198). The first robust attempt to account for these interactive aspects of prosodic focus in natural speech is a series of variationist studies conducted by Yaeger-Dror (1985, 1996, 1997, 2002a, b). Studying a great deal of variability in focal prominence on the English negative ("not") seen in everyday language use, she claims that two particular principles provide a useful yardstick for figuring out observed variation. The first principle has been put forth by a number of studies (e.g., Prince, 1981; Brown, 1983; O'Shaughnessy & Allen, 1983; Nooteboom & Kruyt, 1987; Hirchberg, 1990; Cutler et al 1997; Hirst and DeCristo 1998) — what Yaeger-Dror (1997) calls the "Cognitive Prominence Principle" (CPP hereafter). It captures variation in focal prominence based on the speaker's cognitive judgment on the information structure: new information in a discourse is given more focal prominence than other information. The other principle is what Yaeger-Dror (1997) calls the "Social Agreement Principle" (SAP hereafter), originally proposed by conversational analysts (Schegloff et al., 1977): engaged in conversation, there is a "universal" preference for speakers to emphasize their signs of agreement with co-participants. A corresponding dispreference for disagreement is manifested by minimizing the extent of disagreement when it arises. Yaeger-Dror's series of studies demonstrate that the variable degrees of focal prominence on English negation are rule-governed in terms of the extent to which speakers are subject to those principles, and that the effects of the principles should differ based on the interactive meanings of negation at every moment of talk-in-interaction.

To illustrate, some major types of interactive meanings of negatives have been extracted from the present dataset, based on Yaeger-Dror's (1997: 6–8) classification.

a) Negation as face-threatening (Brown & Levinson, 1978)

Speaker B:		*A chotto juusu nara ippai aru yo.*[4]
		Look, juice if a lot of there is FP
		'Look, there is a lot of juice if (you want).'
Speaker A:	→	*Juusu wa anmari iranai mon.*
		Juice TOP much want-Neg FP
		'I don't want juice so much.'
Speaker B:		*A soo nano?*
		Is that so?

Speaker B invites Speaker A, who is visiting B, for a drink by pointing out that there is a lot of juice in the refrigerator if A wants something to drink. Speaker A bluntly declines B's invitation for juice in particular through the negative *iranai* ('want-Neg.'), whereby this negative turn

directly threats Speaker B's face want.

b) Negation as informative (neutral)

Speaker E: *Onsen ikitai.*
hot spring go-want
'(I) want to go to a hot spring.'

Speaker F: → *Onsen* ikita::i. (2.0) *itta koto nai onsen ikitai.*
hot spring go-want went incident Neg hot spring go-want
'(I) WANT to go to a hot spring. (2.0) I want to go to the one I've never been to.'

Speaker E: *Higashikawa oide.*
Higashikawa come
'Come over to Higashikawa (Speaker K's hometown).'

Speaker F: *Onsen aru?*
hot spring there is
'Is there a hot spring?'

Speaker E: *Aru yo.*
there is FP
'There is.'

Speaker E suddenly shifted the topic of conversation to "going to hot springs." Speaker F shows her enthusiastic agreement with what Speaker E said by repeating the same sentence with an emphasis of drawling on the verb *ikita::i* ('want to go'). Then, Speaker F provides some additional information through the negative (i.e., she wants to go to a hot spring to which she has never been), which has a neutral status in relation to Speaker E's face while contributing to the succeeding exchanges between the speakers.

c) Negation as supportive

Speaker D: *Nani minna no wa kara hazusareru no?*
What? everyone Gen circle from exclude-Pass Q

Speaker C: @@@@@[@@@]

Speaker D: [*Naze*?] @@@ [*nanka warui* <@*koto shita*?@>]
Why? something bad thing did

Speaker C: [@@@@@@@@]

→ (0.5) *sooyuu wake ja* <u>*na::i*</u> *tte sa::.*
such reason Cop Neg Voc FP

D: 'What? Are you gonna kick me out?'
C: @@@@@@@@
D: 'Why?' @@@ Have I done anything wrong?'
C: @@@@@@@@ That is <u>not</u> the reason!'

Discussing room assignments for their class trip to a hot spring town, Speaker D jokingly reacts to Speaker C's preceding tease that Speaker D will have to stay in a room with other classmates with whom D is not so close. In reply to Speaker D's playful pursuit, Speaker C finally provides a supportive statement through the negative (*sooyuu wake ja* <u>*na::i*</u>) ("preferred disagreements") (Pomerantz, 1984), so Speaker D will not lose her positive face, and implies that the classmates in their social circle all like her and want her to stay in the same room as them.

It has been demonstrated that the speaker systematically controls the degree of focal prom-

inence on negation, depending on what type of social meaning a particular token of negation creates at every moment of talk-in-interaction (Yaeger-Dror, 1996, 1997; Takano, 2001). The theory predicts that focal prominence on the face-threatening "*-nai*" in Excerpt (a) is likely to be minimized, and the supportive "*-nai*" in Excerpt (c) is likely to be maximized in accord with the SAP. The informative (thus, neutral to the interlocutor's face wants) "*-nai*" in Excerpt (b), on the other hand, is likely to be prominent because the efficient delivery of information is a major concern for the speaker to contribute to the smooth flow of conversation, in accord with the CPP.

Once highly interactive data are closely examined, it becomes evident that the status of information conveyed by the negative is not only determined by informational structure of discourse, but also begins to carry certain social meanings or paralinguistic messages that dynamically change from moment to moment even within a single interaction. Variability in focal prominence observed in the present corpora also appears to respond to such interactive dimensions in some systematic, principled ways. The present study will accommodate this perspective in its research design.

4. Data

The dataset for the present study consists of three informal dyadic same-sex conversations. One of the conversations recorded in early 2000 involves a female homemaker in her mid-20s and her 28-year-old female friend (Speakers A and B), and each of the remaining conversations recorded in late 2000 involve two female college students in their early 20s (Speakers C and D; E and F). All the participants in the conversations are the speakers of Hokkaido dialect. A total of 264 occurrences of the Japanese negative "*-nai*" were analyzed in terms of prosodic prominence. Table 1 shows the distribution of tokens across the speakers.[5)]

5. Methods for Analysis

5.1. The domain and criteria for prosodic analysis

For my analysis of focal prominence on "*-nai*" to be as consistent and objective as possible, I first set up the domain of analysis, roughly adopting the Japanese ToBI system for transcription of intonational patterns (Venditti, to appear). The domain of analysis is based on the tonally-defined intonation phrase boundary surrounded by the strong disjuncture (i.e., the intonation phrase identified by Break Index 3 [BI3] in the system) (see Figure 1). The intonation phrase in Japanese consists of a string of one or more accentual phrases surrounded by the medium disjunctures (Break Index 2 [BI2]), and is typically characterized as having reduced pitch range at the end of a phrase due to a process of downstep and a pitch reset at the beginning of a new intonation phrase. Whether the negative "*-nai*" is prosodically prominent within a single

Table 1: Number of the Japanese Negative -NAI Analyzed

CONVERSATIONS	SPEAKER	# OF TOKENS
Conversation 1	A	68
	B	20
Conversation 2	C	51
	D	35
Conversation 3	E	51
	F	39
	Total: 264	

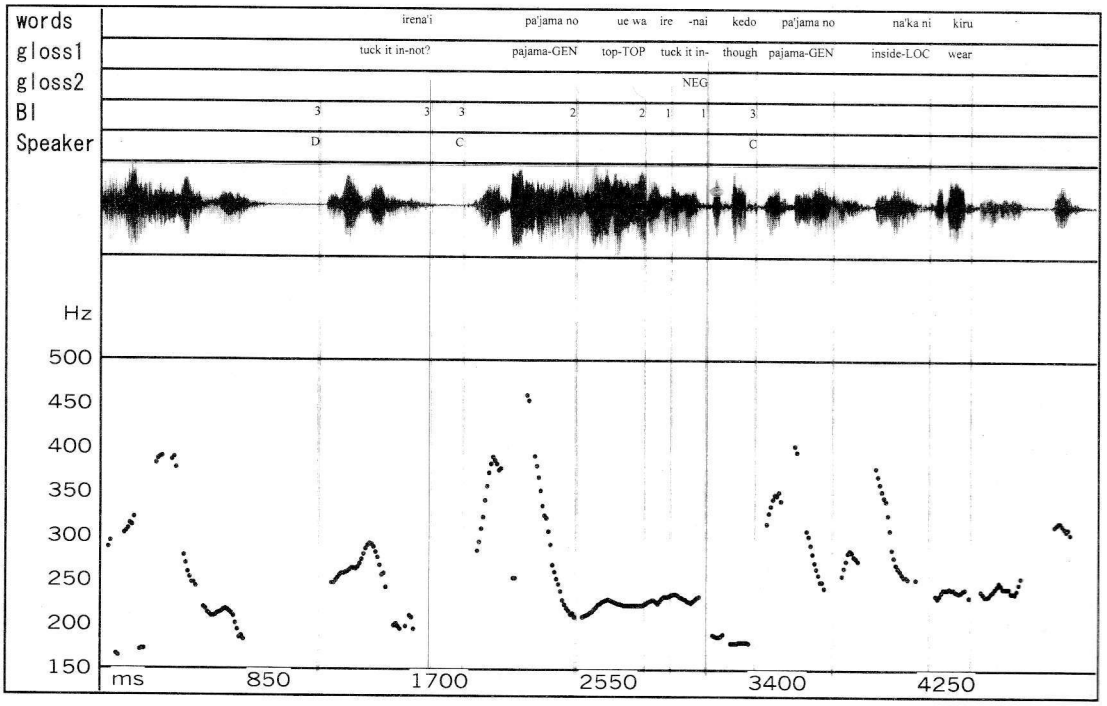

Figure 1

intonation phrase (i.e., the dependent variable) is judged using the speech analysis program called Pitchworks, which permits analysis of pitch movements (Fo) and intensity (loudness).

FIGURE 1
The Domain of Analysis

In Figure 1, three intonation phrases (IP) can be identified by Break Index 3: IP(1) *Irena'i*? (Speaker D asks Speaker C, "Don't you tuck it [your shirt] in [your pants]?"); IP(2) *Pa'jama no ue wa irenai kedo* (Speaker C responds to D's question, saying "I don't tuck it in the pants of my pajamas but,"); and the initial portion of IP (3) (*pa'jama no na'ka ni kiru ...*) is also seen (Speaker C continues, "[what] I wear inside my pajamas ....,"). D's question (*irena'i*?) is an independent utterance preceded by a slight pause, thus is regarded as a single intonation phrase. C's response to it (*pa'jama no ue wa irenai kedo pa'jama no na'ka ni kiru ...*) is divided into two separate intonation phrases because at the beginning of the second clause (*pa'jama no na'ka ni kiru ...*) the pitch contour is reset (i.e., the beginning pitch is higher than the pitch peak of the immediately preceding accentual phrase), which indicates the start of a new intonation phrase. Thus, the domain of analysis of "*-nai*" prominence in this file is IP(1) (*irena'i*?) and IP(2) (*Pa'jama no ue wa irenai kedo*), and IP(1) has been excluded from analysis since it is an interrogative utterance.

Whether the negative "*-nai*" is prominent within a single intonation phrase is judged from several specific criteria. Based on past studies that regard pitch as playing the primary role among various prosodic parameters and intensity, and duration as playing the secondary in phenomena of Japanese focus (Koori, 1989ab; Azuma, 1992ab), the present investigation has begun with pitch movement as the primary variant, while paying attention to any marked use of intensity or duration as well. Thus, the prime criterion for the negative "*-nai*" tokens to be prominent is concerned with the occurrence of a mismatch between the actual pitch contour

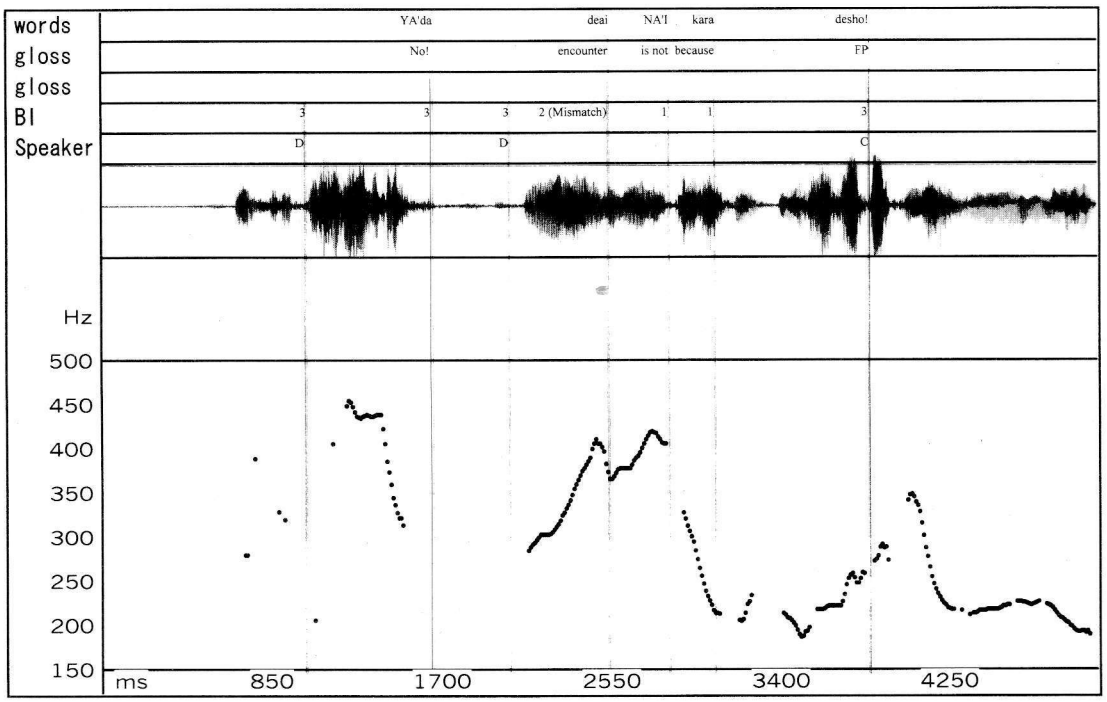

Figure 2

placed on "*-nai*" itself and the degree of disjuncture (see Figure 2).

FIGURE 2
Mismatch between Pitch and Disjuncture

In Figure 2, the second intonation phrase (*Deai NA'I kara desho*!, 'Because there is no chance [for them] to meet people, that is why!') is the domain of analysis of "*-nai*" prominence. This particular token should be considered as prominent because the pitch placed on the "*nai*" itself is reset or higher than that of the immediately preceding accentual phrase (*deai*) (BI2) in contrast to expected, unmarked gradual pitch declination (i.e., downstep) toward the end of IP. For analytical purposes, I consider this type of localized pitch reset because the mismatch with the pitch peak in question is markedly high enough to create a brand-new intonation phrase, despite that it is preceded by the weaker disjuncture (BI 2 Mismatch).

Japanese is lexically accented. Depending on the accentual type of the lexical item to which "*-nai*" is attached as the negative suffix,[6] and on the immediately following prosodic environment of "*-nai,*" the negative "*-nai*" itself is either accent-bearing or unaccented. When "*-nai*" is unaccented from the intonational environment in which it is embedded (i.e., "*-nai*" itself is impossible to bear its accented pitch), the presence or the absence of the mismatch is based on the pitch peak of the lexical item to which "*-nai*" is suffixed. Figure 3 from my other database of Japanese political debates illustrates the point.

FIGURE 3
Mismatch between Pitch and Disjuncture:
Unaccented *-NAI*

In this IP (*Kihonteki ni ie'ba nihon no shoo'rai wa NAORA'nai to omoimasu,*[7] 'Basically [speaking], I think that Japan [economy] will not recover in the future."), the negative "*-nai*" under investigation is the suffix to the accented verb, *nao'ru* ('recover'), whose lexical accent is transformed to *naora'nai* ('not recover'). Though it is obvious that the pitch placed on this

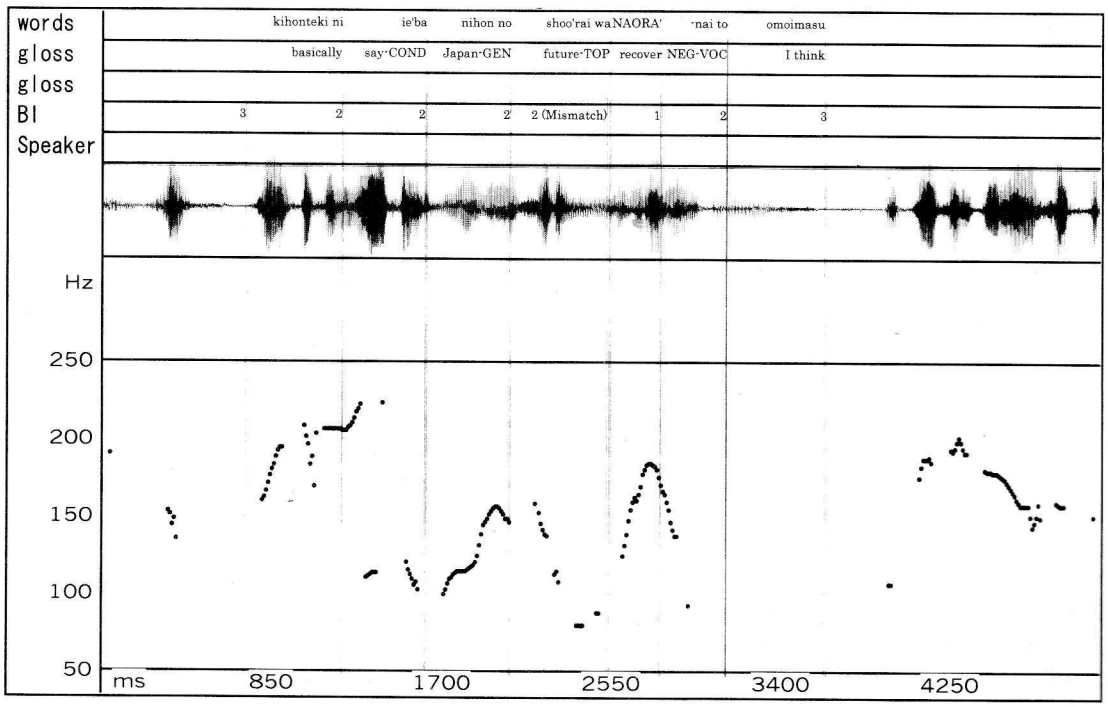

Figure 3

unaccented "*-nai*" itself shows a falling contour, and thus is not reset, this particular token is judged to be prominent because a mismatch is identified between the pitch contour given to the lexical item (*naora'-nai*) and its immediately preceding medium juncture (BI2 Mismatch). Notice also that the final accentual phrase of the IP (*to omoimasu,* 'I think that ..') is greatly reduced in terms of pitch and intensity due to the lowered amplitude of creaky voice, resulting in the loss of its pitch contour. This prosodic weakening toward the end of the IP is typical of Japanese speech prosody.

In addition to these prime criteria stemming from the pitch-juncture mismatch, the following cases are also coded as being prominent, even if the BI mismatch is not observed: 1) "*-nai*" itself or the lexical item to which "*-nai*" is suffixed is given a highly marked degree of intensity (or loudness) in the natural flow of intonation, and 2) a preceding lexical accent is moved to an inherently unaccented "*-nai,*" which contributes to its perceptual saliency.

5.2. Potential constraints and the analytical program

To investigate sociolinguistic grammar of variation in focal prominence in Japanese language use, I first hypothesize that the speaker's decision to place focal prominence on the negative "*-nai*" is affected by a variety of factors simultaneously. Multivariate analysis considers the effects of all of the intersecting factors as potential constraints and it measures the relative effectiveness among the factors for the use or non-use of focal prominence on "*-nai,*" based on the present dataset as a representative sample. Based on previous studies of Japanese focal prominence and preliminary investigation of my own, the following is the list of potential factors that I hypothesized may be responsible for apparently chaotic observed variability.

Prosodic Structures

1) Accentual patterns of the negative "*-nai*" (Hattori, 1933; Shibata et al., 1980; Sugitoo, 1982, 1985, 1986; Pierrehumbert & Beckman,

1988; Koori, 1997b):

Accented; Unaccented; Potentially both (depending on context)[8] [2 levels]

Generally speaking, in standard Japanese the auxiliary "*-nai*" itself can receive a lexical accent when it is suffixed to unaccented verbs (e.g., *naku* 'cry' → *nakana'i*), and it is unaccented with accented verbs (e.g., *yo'mu* 'read' → *yoma'nai*) (Kindaichi & Akinaga, 1981). The adjective "*-nai*" preceded by nouns (e.g., *okane ga na'i* 'no money'), adjectives (e.g., *oishiku* [*wa*] *na'i* 'not delicious') or adjectival nouns (e.g., *kirei de*[*wa*] *na'i* 'not beautiful') is inherently accent-bearing. In addition, the prosodic structures of the immediately following environment of "*-nai*" are taken into account since they also affect the realization of lexical accents on "*-nai.*"[9]

2) Proximity of the "*-nai*" token to the end of the intonation phrase (Sugitoo, 1985, 1986; Koori, 1989ab):

Long distance; Short distance (based on the number of morae from the "*-nai*" token to the end of the intonation phrase). [2 levels]

3) Other accented phrase(s) preceding the "*-nai*" token in the same intonation phrase (Oishi, 1959; Kawakami, 1965; Fujisaki et al., 1984; Pierrehumbert & Beckman, 1988; Koori, 1989b).

The intonation phrases in Figures 1 and 3, for example, involve the accented phrases preceding the negative "*-nai*": *pa'jama* ('pajama') in Figure 1, and *ie'ba* ('say-Cond') and *shoo'rai* ('future') in Figure 3. In contrast, the intonation phrase in Figure 2 involves the unaccented phrase in the preceding context: *deai* ('encounter').

Presence; Absence. [2 levels]

4) Other focused element(s) preceding the "*-nai*" token in the same intonation phrase (Fujisaki et al., 1984; Pierrehumbert & Beckman, 1988)

For example, in a single intonation phrase "*Zettai sensoo ni'wa nara'nai to iitsuzu'keta n desu yo.*" ('I kept saying [it] will not absolutely result in war.'), an adverb *zettai* ('absolutely') is given prosodic focus preceding the negative *naranai* ('become-Neg').

Presence; Absence. [2 levels]

Information Status

5) Hierarchy of information (Azuma, 1992b; Koori, 1997b).

Main clause; Subordinate clause; Embedded clause. [3 levels]

The Japanese negative "*-nai*" can occur either in the main clause or in the subordinate clause. In terms of the hierarchy of information, the main clause delivers the primary information of the utterance as a whole, which is more likely to receive focal prominence. The subordinate clause delivers the secondary information that is less likely to be given focal prominence. For the purpose of analysis, the category of main clauses covers the utterances that either share some hierarchical relations with other clauses (*shusetsu* 'main clause' in *fukubun* 'complex sentence') or stand alone without such relations (*tanbun* 'simple sentence,' including fragmental/inconclusive utterances as well as juxtaposed sentences in *juubun* 'compound sentence'). The category of subordinate clauses is further divided into two groups: the subordinate clause (typically with conjunctions) which is the ones subordinate to the main clause in the complex sentence, and the embedded clause which is typically quotative utterances, clausal nominals or modifying clauses.

6) Information status of "*-nai*" in discourse (Prince, 1992).

Brand-new information; Contrastive information; Old information; Unused information; Inferable information. [5 levels]

As reviewed earlier, a number of studies (mainly of English intonation) in interactively impoverished communicative settings regard the informational content of the word or phrase in relation with the prior context of discourse as the impetus for focal prominence: new significant information in the flow of discourse tends to become prominent. The theory predicts that negation, which inherently adds new or contrastive propositional content to prior context of discourse, will be a good candidate for focal prominence. Close examination of information status in the context of discourse in the present data shows that while many of the "*-nai*" tokens

provide brand-new information (i.e., discourse-new, hearer-new), there are a number of "*-nai*" occurrences whose information can be inferred by the listener from the preceding context of discourse (i.e., discourse-new, hearer-new, but can be inferred). Similarly, there are also quite a few occurrences of "*-nai*" which expresses some propositional content already shared by the interactants (i.e., discourse-new, but hearer-old). In addition, some "*-nai*" tokens provide information contrastive to particular entities in prior context, and a few repetitive "*-nai*" tokens can be considered to represent old information (i.e., discourse-old, hearer-old).

Interactive Dimensions

7) Pre-sequences to the "*-nai*" negative (Pomerantz, 1984; Jones, 1990; Yamada, 1992; Mori, 1999; Honda, 2002).[10]
Discourse marker as an upgrader; Discourse marker as a hint; Sentential pre-sequence as overt negation; Sentential pre-sequence as an account; Sentential pre-sequence as a counteractive account; Straight negation without any pre-sequence. [6 levels]

Based on the previous studies, five different types of pre-sequences are identified in the present study. The first set consists of the clause-initial uses of: 1) discourse markers which "upgrade" or "assert" the upcoming negatives (e.g., *datte* 'because,' *dakara/desukara* 'so,' [*sore*]*de* 'then,' *shitagatte* 'therefore,' or combinations of these) and 2) those which "hint" that a negative is on the way (e.g., *demo* 'but,' *shikashi*[*nagara*] 'but/however,' *dake*[*re*]*do*[*mo*] 'though,' *kedo* 'though,' *tokoroga* 'but,' [*i*]*ya* 'nah/no,' or combinations of these). The second set consists of three types of sentential pre-sequences to the clause involving "*-nai*" negation: 3) utterances which bluntly express the speaker's conflicting stance or point of view in advance, prior to the upcoming negative statement (e.g., *Chigau yo. Mongen mo nani mo nai no.* '[You are] wrong. There is no curfew, nothing like that.'); 4) utterances which provide an "account" for a negative statement to follow (e.g., Speaker C responds to Speaker D's preceding question whether the educational programs of the junior college they both graduated from will be changed after its campus moves to a new place: *Kyampasu ga utsuru dake dakara::, zenzen nakami wa ne kawannai to omou yo.* 'Because it is simply the campus that moves, I think that the content [of the programs] will not be changed at all.'); 5) utterances which provide an account counteractive or contradictory to the upcoming negation (e.g., criticizing a female friend of Speaker D's for her intent to marry a much older man for the sake of financial stability, Speaker C provides an counteractive account as the pre-sequence: *suki de kekkon shita no kamoshirenai kedo sa, soko made kangaenai na.* 'Though she might have got married [with him] for love, I would not take it [i.e., financial stability] into account [when I decide to marry]).

It has been pointed out that in studies of disagreeing turns in Japanese as well as in English that certain linguistic materials are exploited to preface (or contextualize) the upcoming disagreement as the markers of opposition, and the ways of contextualizing disagreeing turns should involve both universal and culture-specific elements. The fifth type, counteractive accounts, is presumably Japanese-specific use of the pre-sequence to the upcoming disagreement (Jones, 1990; Yamada, 1992; Honda, 2002). The present framework of analysis explores the possibility of any meaningful interplay between these syntactic devices and prosodic parameters.

8) Concurrence with the shift of linguistic elements to the post-predicate position (i.e., dislocation/post-position) (Hinds, 1982; Ono & Suzuki, 1992; Fujii, 1995).
Presence; Absence. [2 levels]

It has been pointed out that the dislocation of linguistic elements to the post-predicate position in Japanese, which is a strict SOV language, has to do with the speaker's emphasis of information in a discourse. How prosodic emphasis interacts with this syntactic alternative will be investigated.

9) Footing (Goffman, 1981; Yeager-Dror, 1996, 1997)
Face-threatening (e.g., Excerpt [a] above);

Informative (or neutral to the interlocutor's face wants) (see Excerpt [b] above); Supportive (see Excerpt [c] above); Self-protection (or making excuses) (e.g., Speaker F, making an excuse for her recent poor performance and disinterest in a school subject: *Aru to omou kara benkyoo-shinaishi sa.* 'Because I know that I possess [the copies of previous exams to refer to], I wouldn't study hard [for the exam].'); Self-denigration (e.g., Speaker E, responding to Interlocutor L's previous statement that she has succeeded in losing some weight: *Yaserenai* 'I can't lose weight.'); Self-correction (e.g., Speaker E, talking about a former teacher of hers in junior high school: *Kibishii desho, Naguru desho,* (.) *Naguri wa shinaika.* 'He WAS strict, and HIT [his students]. He didn't hit, exactly.'); Agreement seeker (e.g., Speaker A to Speaker B: *Ichiichi hiyakedome nante nutterarenai ssho.* 'You cannot apply the lotion to prevent sunburn every time [you go out].'); Face-threatening with humor (e.g., Speaker E, responding to Interlocutor F's preceding joke that F's mother, who is going to visit her, may follow her around on campus, even to the students' cafeteria, but the mother is not permitted to enter the cafeteria without a student pass: *Sonna kimari naitte.* 'There is no such rule.') [8 levels]

In the act of negation, the speaker not only negates the propositional content but also creates a variety of footing, measuring up the negation's social meanings and impact on the listener in every moment of interaction. In the present dataset, the negative "*-nai*" is also used to fulfill a wide variety of interactive meanings as well as directly express the speaker's disagreement with the listener.

The present study uses Goldvarb (Rand & Sankoff, 1990), the Macintosh application of the statistical model initiated by Cedergren and Sankoff (1974). The program conducts a multivariate analysis of data using the maximum likelihood technique.[11] Based on natural speech data, this technique allows one to yield a probability estimate of the effect of each potential constraint on the application of the rule in question (i.e., focal prominence on "*-nai*") in relation to the other remaining constraints. Due to the unavoidable skewedness of sociolinguistic data and the necessity of figuring out the complex intersecting relationships among a number of potential factors, probabilistic accounts of occurrences or non-occurrences of a variable in question have proven to be superior to the use of bare percentages (Sankoff, 1985, 1986, 1988). The program also allows one to conduct a stepwise regression analysis, which sorts out the groups of variables whose distributions of factor weights are statistically significant. To run the program, I coded a token file that consists of a total of 264 "*-nai*" occurrences in the dataset.

6. Results and Discussion

Table 2 shows a wide range of individual variability in focal prominence on the negative "*-nai*," from the most frequent, 56%, to the least frequent, 13%. An average of 33% (88/264) of the negative tokens received focal prominence.

Varbrul analysis has been conducted to find

Table 2: Individual Variation in Focal Prominence on the Negative -NAI

REGISTER	SPEAKER	# OF TOKENS	% of *-Nai* Prominence
Conversation 1	A	68	56% (38/68)
	B	20	35% (7/20)
Conversation 2	C	51	24% (12/51)
	D	35	37% (13/35)
Conversation 3	E	51	25% (13/51)
	F	39	13% (5/39)
	Total: 264		33% (88/264)

out any rule-governedness underlying this wide range of variability among individual speakers. Table 3 shows the results of analysis obtained from the runs of Goldvarb, and it specifies the frequency of each factor that co-occurs with focal prominence on "*-nai*" and its corresponding probability weight (VR Weight) with a value from 0 to 1.[12]

A weight of .50 indicates that the factor has no effect on the production of the dependent variable (i.e., "*-nai*" prominence). The closer the weight is to 0, the more strongly the factor inhibits the dependent variable. The closer the weight is to 1, the more strongly the factor promotes it. The "input value" shown at the bottom of the table indicates the likelihood that this rule (i.e., focal prominence on "*-nai*") will operate aside from the independent factors considered: 0.289. The average "chi-square per cell" indicates the degree to which the independent factors considered (i.e., the hypothesis constructed) account for the data. The smaller than 1.0 this figure is, the surer we can be that it is not necessary to consider additional variables. Values below 1.5 (conservatively, 1.0) indicate that the fit between the hypothesized model and the data is good (Preston, 1989: 15–6), and the values of the present analysis, 0.8915,[13] are within that conservative range. Five out of nine factor groups have been chosen as being statistically significant by stepwise regression analysis.

Table 3: Variable Rule Analysis of Potential Constraints on Focal Prominence on the Negative -NAI

Factor Groups	Factors	% *-nai* Prominence	VR Weight	Signif.
1) Accentual Patterns	*"-nai" Accented*	37% (75/204)	0.56	
	"-nai" Unaccented	22% (13/60)	0.32	*p < .025
2) Proximity to the End of the Intonation Phrase	*Long (6 or more morae)*	45% (57/126)	0.68	
	Short (5 or fewer morae)	22% (31/138)	0.34	*p < .025
3) Other Accented Phrase Preceding -Nai	*Absence*	54% (45/83)	0.73	
	Presence	24% (43/181)	0.39	*p < .025
4) Other Focus Preceding -Nai	*Absence*	35% (74/214)	0.49	
	Presence	28% (14/50)	0.55	Not Signif.
5) Hierarchy of Information	*Embedded Clause*	34% (16/47)	0.64	
	Main Clause	35% (59/169)	0.47	
	Subordinate Clause	27% (13/48)	0.46	Not Signif.
6) Information Status	*Inferred*	40% (44/111)	0.61	
	Shared/Unused	35% (12/34)	0.45	
	Contrastive	33% (5/15)	0.44	
	Brand-new	27% (21/79)	0.43	
	Old	26% (6/23)	0.33	Not Signif.
7) Pre-sequence	*Discourse Marker as Hint*	61% (11/18)	0.77	
	Sentential PS as Overt Negation	50% (5/10)	0.64	
	Sentential PS as Account	35% (9/26)	0.56	
	Discourse Marker as Upgrader	41% (7/17)	0.51	
	No Pre-sequence	29% (56/191)	0.45	
	Sentential PS as Contradictory Account	0% (0/2)	KNOCKOUT	Not Signif.
8) Dislocation/Postposing	*Yes*	74% (25/34)	0.88	
	No	27% (63/230)	0.43	*p < .025
9) Footing	*Support*	71% (5/7)	0.88	
	FTA with Humor (Teasing)	67% (6/9)	0.82	
	Agreement Seeker	46% (12/26)	0.72	
	Self-Protection/Excuses	47% (8/17)	0.69	
	Self-denigration	44% (7/16)	0.58	
	Self-correction	33% (1/3)	0.55	
	FTA	34% (10/29)	0.47	
	Informative/Neutral	25% (39/157)	0.39	*p < .025
	TOTAL	33% (88/264)		
			* = Factor group selected by stepwise regression analysis Input Value = 0.285 Chi-square per cell = 0.9162	

6.1. Prosodic constraints

Three of the five factor groups (FG-1, 2, 3) that have been found to be statistically significant are concerned with purely structural conditioning from the prosodic environment in which the "*-nai*" tokens are embedded. First, the results of FG-1 clearly demonstrate that the speakers are discouraged to implement focal prominence by lexically unaccented "*-nai*," but take advantage of lexical accents of "*-nai*": the unaccented "*-nai*" strongly inhibits focal prominence (0.32), whereas the accented counterpart weakly promotes it (0.56). This finding accords with the series of past studies of focal prominence in Japanese (Sugitoo, 1982, 1985, 1986; Koori, 1997b), which also argue that lexical accents are closely related to the realization of focal prominence. The studies further claim that the accentual patterns of a word or phrase tend to be maintained even when focal prominence is placed on the item in focus. This is also supported by the present analysis in that only 7 tokens out of 264 (3%) can be identified as the case in which the pattern of lexical accents is violated to bear focal prominence.[14)]

The second structural constraint found to be statistically significant is the robust effects of the position of the negative "*-nai*" within the intonation phrase (FG-2): when the "*-nai*" token is located further than 6 morae (including 2 morae of "*-nai*" itself) from the end of the intonation phrase, it is more likely to receive focal prominence (Long Distance: 0.68), whereas when it is located fewer than 5 morae (including 2 morae of "*-nai*" itself) from the end, focal prominence on "*-nai*" tends to be inhibited (Short Distance: 0.34). There seems to be a major break between 5 and 6 morae to the end of the intonation phrase in terms of the frequency of "*-nai*" prominence (approximately 15% gap). While such lexical items as final particles, the extended predicate, or utterance-final connectives are typically accommodated with "*-nai*" within 5 or fewer morae to the end of the intonation phrase, another clause or phrase tends to follow "*-nai*," elaborating the propositional content further, over 6 or more morae, from the end of the intonation phrase.

As one of the general principles of Japanese intonation, pitch range tends to become narrower in its magnitude (i.e., "downstep" or "catathesis") (Beckman & Pierrehumbert, 1986; Pierrehumbert & Beckman, 1988; Kubozono, 1989; Azuma, 1993) and accentuation is likely to lose its momentum toward the end of the intonation phrase where "de-generation" of accents is commonly observed (Maekawa, 1994; Koori, 1989b; Venditti, to appear). These general principles are counter-productive to the realization of focal prominence on the negative "*-nai*," which occurs mostly at the predicate-final position in canonical Japanese utterances. The present results precisely demonstrate that focal prominence on the negative is also heavily subject to these structural principles specific to Japanese intonation. Furthermore, our preceding finding that the speaker is inclined to take advantage of lexical accents in implementing focal prominence (FG-1) can also provide an indirect piece of supportive evidence for why the phenomenon is consistently disfavored as its locus comes closer to the end of the intonation phrase where accentual differentiation tends to be neutralized.

Both FG-3 and FG-4 have been established to examine how the presence of other lexical accents or prosodic focus in the prosodic environment preceding "*-nai*" has effects on the realization of focal prominence within an intonation phrase. Past studies of connected speech data from read materials show that preceding lexical accents dynamically affect the shape of other lexical accents in the succeeding prosodic environment, and also that preceding prosodic focus restrains lexical accents of the succeeding elements because the peak of pitch range following the focused items tends to be lower due to a general principle of catathesis (Fujisaki et al., 1984; Pierrehumbert & Beckman, 1988).

Based on these observations, I hypothesized that some degree of correlation may exist between the prevalent phenomena and variability in focal prominence on "*-nai*" since the location of "*-nai*" is predominantly toward the end of the utterance in Japanese. The hypothesis has been found relevant only to the presence/absence of lexical accents. The statistically significant re-

sults (FG-3) demonstrate that it is unlikely that speakers who have assigned proper accents inherent to lexical items still implement focal prominence in a single intonation phrase: the absence of other lexical accents in the environment preceding "*-nai*" strongly promotes focal prominence (0.73), whereas their presence inhibits it (0.39). The effects of prosodic focus on other elements preceding "*-nai*" (FG-4), on the other hand, are found to exert almost neutral effects (Presence: 0.55, Absence: 0.49).

The statistically insignificant results in FG-5 and 6 (Table 3) demonstrate that Japanese focal prominence is not subject to the Cognitive Prominence Principle (CPP) in that the speaker's cognitive judgment on the information structure of discourse is unlikely to play critical roles in observed variability in Japanese prosodic focus. This outcome coincides with Sugitoo's (1985, 1986) argument for language specificity in focal prominence phenomena in Japanese, but it is counter to a number of prior studies of other languages that put forth the "highlighting-based," universalist view of focal prominence. In fact, both the finding in FG-2 (i.e., the farther "*-nai*" is located from the end of the intonation phrase, the more likely it is to obtain prominence) and these statistically insignificant results further support Sugitoo's finding that linguistic elements in the clause-/phrase-initial position tend to receive prominence in Japanese, regardless of whatever information status they may represent in the flow of discourse. In addition, the statistically significant results of FG-3 discussed above further justify the "structure-based" account in that the internal structure of the IP in terms of the assignment of lexical accents plays a definitive role in Japanese focal prominence.

At any rate, the results of FG-5 (Hierarchy of Information) indicate a relatively high probability weight for the embedded clause in favor of focal prominence (0.64). This tendency is quite contradictory to a CPP-linked generalization that the subordination of information disfavors prosodic prominence. A similar claim has also been made in Japanese language context that the embedded clause tends to carry lower pitch contours, as compared with the main clause (Azuma, 1992b). This particular weight, however, appears to be linked to interactional dimensions in the present corpora. Focal prominence frequently co-occurred with quotative (or reported) speech: nine out of 16 prominent "*-nai*" in the embedded clauses result from quotative speech (56%; cf., the average of 34% for the embedded clause). Quotative speech is a domain of discourse in which affective meaning is likely to be expressed, and prosody is a typical affect-communicating channel (Besnier, 1992). In the present corpora of highly interactive casual exchanges, the speakers' involvement in the utterances as well as somewhat dramatized descriptions of events through "replays" were observed with those prominent "*-nai*" tokens in quotative speech, which resulted in that high degree of prosodic prominence for the embedded clauses.

A statistically insignificant tendency for the information status of the negative "*-nai*" to affect variability is also shown in the results of FG-6. Except for a partial agreement with the finding of past studies of non-interactive data that old insignificant information in discourse is less likely to be given prosodic focus (0.33), striking contradictions to the CPP are also found in the distribution of the probability weights (e.g., 0.43 for Brand-new; 0.44 for Contrastive; 0.61 for Inferred). Though I do not have a plausible explanation to offer for each of the contradictory numbers, closer examination of individual tokens suggests that the relatively high probability for inferred information (0.61) is linked to one of the interactive parameters: the overall positive effects of "pre-sequence" on "*-nai*" prominence. The results of FG-7 (Pre-sequence), which will be discussed in detail in the next section, show that the use of discourse markers or sentential pre-sequences as the "preface" of upcoming negatives consistently favors focal prominence. That is, these interactive devices clearly help the listener "infer" what information is to be conveyed by upcoming negatives. This particular aspect of the findings is another empirical piece of evidence for the significance of interactional dimensions at every moment of negation over

informational significance in the flow of discourse. The former should contribute more to an authentic picture of prosodic variability in natural face-to-face exchanges.

Overall, the results discussed so far suggest that the CPP provides a relatively insignificant driving force for Japanese focal prominence once the simultaneous effects of purely structural conditioning from the prosodic environment in which the element in focus is embedded are also taken into consideration. Focal prominence phenomena in Japanese are heavily subject to rather "mechanical" application of prosodic principles specific to the language. It is the prosodic environment in which the focused element is embedded that heavily governs observed variability, rather than such "functional" considerations as information-processing, which a number of past studies of western languages have stressed so far. Exclusive focus on the highlighting-based accounts of focal prominence does not seem to be productive in the case of Japanese. One needs to pay much closer attention to surface-level conditioning derived from the language-specific prosodic makeup as well.

6.2. Interactive parameters

Thus far, we have become well-informed of the mechanism underlying variability in focal prominence on the negative "*-nai*," especially why some utterances are more likely to receive prosodic focus than others, in terms of purely structural conditioning from the prosodic environment. As pointed out earlier, past studies on prosodic focus, which have been done predominantly in laboratory phonology, have critically neglected the impact of interpersonal dimensions on the phenomena, due to prevalent bias in the use of non-interactive registers as analytical data. A major thrust of the present study is to shed fair light on the dynamic systems of prosody that are generally highly susceptible to the interactive dimensions of everyday language use.

Table 3 shows that the types of footing of the negative "*-nai*" (FG-9) (see Sections 3 and 5.2 for discourse examples) have been found to exert statistically significant effects on the phenomena. One of the remaining factor groups (FG-8) for interactive parameters is also found to exert statistically significant effects on focal prominence on "*-nai.*"

First, as for the overall distribution of the "*-nai*" tokens in FG-9 (Table 4), about the half of the negatives are used to create informative (neutral) types of footing (60% [157/264]). In contrast, only 11% (29/264) of the tokens are used to express direct disagreement with co-participants, according to the Social Agreement Principle (SAP) (Yaeger-Dror, 1997): the signs of disagreement are minimized for the universal preference regarding agreement in conversations. The remaining tokens display a wide range of distribution across various types of footing.

Varbrul analysis reveals that there are tangible principles underlying the speakers' behaviors in exploiting focal prominence on negation: the speaker's decision-making processes are subject to the interactive meanings of negation at every moment of use. The participants in casual conversations whose interactional goal is to maintain or promote interpersonal rapport and

Table 4: Distribution of the Tokens and -NAI Prominence across Footing

Footing	Distribution of Tokens	% of -nai Prominence	Varbrul Weight
1) Support	3% (7/264)	71% (5/7)	0.88
2) FTA with humor (Teasing)	3% (9/264)	67% (6/9)	0.82
3) Agreement Seeker	10% (26/264)	46% (12/26)	0.72
4) Self-protection/Excuses	6% (17/264)	47% (8/17)	0.69
5) Self-denigration	6% (16/264)	44% (7/16)	0.58
6) Self-correction	1% (3/264)	33% (1/3)	0.55
7) FTA	11% (29/264)	34% (10/29)	0.47
8) Informative/Neutral	60% (157/264)	25% (39/157)	0.39
TOTAL % OF -NAI PROMINENCE		33% (88/264)	

solidarity appear to resort to focal prominence as both positive-polite and negative-polite paralinguistic messages, as shown in such high probabilities as support (0.88), teasing (0.82), agreement seeker (0.72) for the former; and in self-denigration (0.58) for the latter.[15] These results provide empirical evidence counter to the prevalent stereotype that Japanese language use is heavily oriented to negative politeness and deference to others, minimizing face-threatening elements of speech by all means. The present results demonstrate that though the occurrences of direct disagreement itself are relatively rare (in accord with the SAP), face-threats are not totally abhorred once the participants have to face direct disagreement (FTA: 0.47). Alternatively, positive-polite norms of interaction are equally stressed and heavily exploited as the core elements for building interpersonal relations. Vigorous research on this relatively neglected aspect of Japanese linguistic behaviors is vital for the future direction of research on Japanese language use.

One remaining interactive parameter found to be statistically significant concerns the shift of linguistic elements to the post-predicate position and its statistically significant effects in favor of focal prominence (FG-8 in Table 3): postposition strongly favors focal prominence (0.88) whereas canonical word order weakly disfavors it (0.43).[16]

Ono and Suzuki (1992) argue that, in contrast to the postposition in which a break in intonation contour, or a pause, intervenes between the predicate and the postposed element, the postposition expressed throughout a single intonation contour without any break evokes emotive overtones, enhances discourse cohesiveness with the preceding context, or strengthens the speaker's stance toward the proposition, referent, or topic being discussed in the preceding context.[17] Fujii (1995), though not referring to intonational characteristics, also makes a similar generalization that postposition fulfills a "highlighting" function of the propositional content of the preceding clause. The patterns of variability in focal prominence detected here precisely represent these characteristics: postposed elements contribute to highlighting the locus of negation in the preceding clause by the prosodic means. It should also be noted that postposition is linked to the positional factor discussed in FG-2: the farther the negative "*-nai*" is located from the end of the intonation phrase, the more likely it is to obtain focal prominence. Syntactic dislocation creates this favorable prosodic environment for focal prominence, and the speaker seems capable of manipulating both syntactic and prosodic means of focus in a synergistic fashion for interactive purposes. This is one of the incidences of meaningful collaboration between syntax and prosody found in the present study.

The last interactive parameter to discuss, though not statistically significant, also concerns a different pattern of syntax-prosody collaboration: the effects of syntactic pre-sequence on prosodic focus on the upcoming negatives (FG-7 in Table 3). Past studies of syntactic operations in Japanese disagreement (e.g., Jones, 1990; Yamada, 1992; Watanabe, 1993; Mori, 1999; Honda, 2002) commonly stress that Japanese-specific ways of delivering direct disagreement lie in what precedes the locus of disagreement, and they account for various interactional functions of particular linguistic features (e.g., connectives, hedges and intensifiers, discourse framing) as the markers of opposition moves, or as the cues to contextualize such moves (Gumperz, 1982). A connective such as *demo* ('but') (Type 2, discourse markers as the hint; see Factor Group [7] in Section 5.2), for example, is a typical discourse marker of opposition (Jones, 1990), which allows the speaker to express an intent to disagree in hedged, non-transparent ways which allow the listener to figure out that intent in advance (Mori, 1999). A connective such as *datte* ('because') (Type 1, discourse markers as the upgrader), on the other hand, is interpreted to reinforce the upcoming disagreeing turn more overtly as a justification for or as an assertion with the speaker's intent to disagree (Mori, 1999). As for sentence-level pre-sequences to disagreeing turns in Japanese interactions, the elaborated system of "face work" is commonly found to involve extensive uses of

mitigators (Type 4), often along with contradicting remarks to the upcoming disagreeing turns (Type 5) (Watanabe, 1993; Honda, 2002).

The present results show that the use of pre-sequences exerts consistent effects favoring focal prominence on "*-nai*", but does so to quite varying degrees depending on the interactional types of pre-sequences in a discourse. Given 5 different types of pre-sequences (see Factor Group [7] in Section 5.2), there seems to be a general trend that the "prefacing" types of pre-sequences, which provide a hint for the negative on the way, are more likely to co-occur with prosodic focus (Discourse Marker [DM] Hint 0.77 and Sentential Account [SA] 0.56) than the "upgrading" types which assert the upcoming negatives (DM Upgrader 0.51 and Sentential Overt Negation [SON] 0.64).[18] Furthermore, the discourse markers as the pre-sequence generally exert stronger effects favoring focal prominence than the sentential alternatives particularly in the mitigating types (DM Hint 0.77 vs. SA Hint 0.51). Consequently, the discourse markers that serve to preface the upcoming negatives (i.e., Type 2) are found to yield the strongest effects in favor of focal prominence (0.77).

The present analysis of potential interaction between these syntactic devices and the prosodic parameter seems to provide a new perspective on interactional work common to Japanese disagreement — the one which would not be attained by the traditional framework of analysis dependent on syntactic manipulations alone. Though they still need a statistical confirmation,

Table 5: Hierarchy of Constraints on Focal Prominence on the Negative -NAI

Weight	Promoting Factors	Inhibiting Factors
0.9	Footing: Support/ Postposition	
	Footing: FTA with Humor (Teasing)	
0.8		
	Absence of Preceding Accented Phrase	
0.7	Footing: Agree	
	Footing: Self-Protection	
	Long Distance	
0.6		
	Footing: Self-denigration	
	Accented -NAI	
	Footing: Self-Correction	
0.5		
		Footing: FTA
		Canonical Word Order(No Postposition)
0.4		Footing: Informative
		Presence of Preceding Accented Phrase/
		Short Distance
		Unaccented -NAI
0.3		

the present results indicate that syntactic presequences and prosodic focus on the locus of negation do not necessarily move hand-in-hand in the identical direction of illocutionary force, but appear to collaborate in a "complementary" fashion to each other: prosodic focus is likely to be exploited when the speaker's intent to disagree is syntactically mitigated (or implied) through syntactic prefaces (i.e., hints), whereas it is likely is to be avoided when upcoming disagreeing turns are already asserted through syntactic upgraders. The results also suggest that the prosodic parameter shares tighter relations with the use of discourse markers than with sentential operations. All these observations certainly require further examination with more heterogeneous sets of data. In particular, it remains an unsolved question at this point whether these patterns of syntax-prosody interplays are a universal or culture/language-specific variable.

To conclude this section, Table 5 presents the summary of constraints on variability in focal prominence with the Japanese negative "*-nai.*"

Sociolinguistic grammar of variation in Japanese focal prominence consists of the hierarchy of relative effectiveness among the meaningful constraints. A variety of combinations of the intersecting constraints simultaneously affect the speaker's decision in the use or non-use of focal prominence. Based on variable grammars, we can predict whether the negative will receive focal prominence or not in a given utterance, and explain why observed variability has been obtained. A majority of relatively powerful constraints in favor of focal prominence are linked to the interactive parameters, whereas influential constraints to inhibit focal prominence are derived primarily from the structural principles of prosody specific to the Japanese language.

7. Conclusion

In the framework of variation theory, the present study has attempted to account for systematic variability in Japanese focal prominence observed in natural speech. The analysis of relative effectiveness among the variety of intersecting constraints simultaneously affecting the phenomena has empirically proved that the language-specific "structure-based" accounts should contribute to the formation of a more legitimate theory than the universalistic "highlighting-based" accounts in the case of Japanese focal prominence. The informational properties of the element in focus in the flow of discourse are found to play a relatively minor role as the constraint.

Furthermore, the results have also revealed that prosodic variation is subject to rather "mechanical" structural principles of prosody of the language (especially in disfavoring effects). This suggests that interactional perspectives alone, on which a great majority of prior pragmatics studies have focused as the driving force, should not necessarily succeed in accounting for the whole picture of the phenomenon.

The present study has also attempted to fill the critical gap in the design of prior research that neglects highly interactive aspects of prosody in natural face-to-face exchanges. Based on a sociolinguistic hypothesis that using negation is inherently face-threatening in interpersonal communication, the results have demonstrated that variability in focal prominence is constrained systematically by a variety of interactional meanings negotiated between the co-participants at every moment of talk-in-interaction. In addition, the significance of syntax-prosody collaboration has been detected as powerful constraints in favor of focal prominence. This issue, however, remains subject to further investigation.

Notes

1) I am very grateful to Malcah Yaeger-Dror for her insightful comments and encouragement. I also thank Matsuo Yuki and Kaori Matsukawa for their assistance on data collection and transcriptions.

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2) "Sociolinguistic grammar" is equivalent to a performance grammar involving structured, rule-governed variability in language use. It is covariate with a composite of linguistic/discoursal constraints and extra-linguistic factors (Cedergren and Sankoff, 1974).

3) It should be noted that there is a study focusing on information structure at the sentence level. Equating focal prominence with such a paralinguistic dimension as the speaker's "focus of appeals" ("*uttaekake no shooten*"), Koori (1997b:140) argues that focal prominence is likely to be placed on the word which carries significant information relative to the others in a sentence.

4) Broad transcriptions are based on Sacks et al. (1974) system with some additions. Major symbols include: [ ] (speech overlap); **Underlining** (Emphasis); **Underlining and CAPS** (more emphasis); **(.)** (short interval); **(2.0)** (timed interval); **::** (drawling); **?** (full raise); **period** (fall to low); **comma** (fall not to low); / / (slow tempo); @ (laughter); **<@ @>** (laugh quality). **!** (appeal); **x** (indecipherable syllable).

5) The following specific types of utterances were excluded from analysis: frozen/idiomatic expressions (e.g., *-sezaru o enai, -nakereba naranai, -kamo shirenai,* etc.), contracted forms (e.g., *-nakereba → nakya*), archaic forms (e.g., *yomanu, kozu,* etc.), interrogative utterances (e.g., *nomanai no*?) and imperatives (e.g., *iwanaide*).

6) The grammatical status of the Japanese negative *nai* is twofold: 1) the auxiliary verb suffixed to verbs and other auxiliaries; 2) the negative adjective which predicates nouns, other adjectives, adjectival nouns, and nominalized phrases, often with postpositional particles (*wa, de, dewa*) intervened (Nihongo Kyouiku Gakkai, 1993). Most unaccented "*-nai*" tokens tend to occur when "*-nai*" is suffixed to accented verbs.

7) It might be possible to regard the initial portion (*kihonteki ni ie'ba*) as an independent IP. However, I decided to absorb it into the single IP due to the speaker's fast, continuous enunciation of the entire IP as a single breath chunk.

8) Consequently, a very small number of tokens that belong to this category have been excluded from analysis.

9) The author is a native speaker of the Hokkaido dialect, born and raised in the southern part of Hokkaido. Analysis of this particular aspect was based on my own intuitions as a native speaker of the dialect.

10) The scope of analysis of pre-sequence extends beyond the intonation phrase, which is the basic unit of analysis discussed in Section 5.1.

11) A similar program to this is ANOVA. Algorithms for calculating ANOVA, however, normally require balanced numbers of tokens in each cell, which would be possible only with data from controlled experimentation (Young & Bayley, 1996). Therefore, VARBRUL is the only alternative to successfully handle the extremely skewed nature of sociolinguistic data from naturally occurring speech (see Young & Bayley 1996 for further discussion on the validity and implementation of VARBRUL for sociolinguistic research).

12) Algorithms for VARBRUL do not allow for any interaction among the independent factors. Therefore, I conducted several Goldvarb runs so as not to include the factors that appear to interact with each other in a single run. Those factors are Factor Group FG-2 and FG-5, FG-2 and FG-8, and FG-6 and FG-7.

13) This figure represents the worst (i.e., highest) chi-square per cell value of all the Goldvarb runs.

14) Seven out of 264 tokens (3%) involve a violation of lexically assigned accentual patterns. I suggest a possibility that this violation may be idiolectal since 6 of the 7 tokens are used predominantly by Speaker A who talks with her close friend, Speaker B. Coincidentally, Speaker A is a speaker who greatly deviates from the group with her strikingly higher percentage of "*-nai*" prominence (56%) than the average of the remaining speakers (26%).

15) The relatively high probability for the "self-protection" footing (0.69 [47%, 8/17]) is largely due to the speaker's emotional responses (often along with humor and jokes) to the interlocutor's challenge regarding personal topics (e.g., former boyfriend, makeup, job hunting, etc.).

16) For example, in an utterance *Mita koto nai yo* ***sonna no*** ('I've never seen **such a thing**'), *sonna no* ('such a thing') is revealed after the predicate which contains the negative "*-nai.*" The canonical word order should be *Sonna no* (*wa*) *mita koto nai yo* in which *sonna no* is a topic.

17) Needless to say, postposed elements analyzed in the present study belong to this latter type, since the intonation phrase as the domain of analysis is based

strictly on a single intonation contour (but regardless of the presence or absence of a pause in Japanese ToBI).

18) The probability weight 0.64 for sentential presequences as overt negation is the sole deviation from this general pattern.

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