A quantitative study of gender differences in the ellipsis of the Japanese postpositional particles *-wa* and *-ga*: Gender composition as a constraint on variability

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ABSTRACT

It has been claimed that the ellipsis of postpositional particles is one of the properties of Japanese women's language. The validity of this claim, however, is compromised by several methodological problems in prior research in this area: (1) the subjective comparison of bare percentages without any statistical verification of male–female differences; (2) the neglect of the intersecting relationships among a variety of potential constraints which simultaneously influence the speaker's choice of the variable; and (3) the exclusive focus on single-sex interactions. Conducting multivariate analyses of conversational data from both single-sex and cross-sex peer interactions, this preliminary study demonstrates the overgeneralization of gender-linked differentiation in past work due to the neglect of the relative strength of potential intersecting factors. The results also reveal statistically significant degrees of stylistic intragender variability across different types of gender composition, which counters the static approach to a social variable of gender in the traditional sociolinguistic paradigm.

This article focuses on gender-related variation in the ellipsis of the nominative particle ga and the topic marker wa in Japanese.¹ First, observe the phenomenon from a casual conversation I recorded:

- (1) a. Kuriimu ga amain da. cream NOM. sweet COP.'The frosting on the cake must be sweet.'
 - b. Kimoti Ø warui toka.
 feeling NOM. bad etc.
 'You feel bad, that kind of thing.'
- (2) a. Syusshian wa doko desu ka. hometown TOP. where COP. Q-PARTICLE 'Where are you from?'

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b. Fooku Ø arimasu yo nee. fork TOP. there is PART. PART. 'You have a fork, don't you?'

These particles are dropped with high frequency in informal colloquial speech (Kuno, 1972; Martin, 1975; Peng et al., 1981; Shibatani, 1990; Tsutsui, 1981, 1983, 1984). Utterances with particle ellipsis sound more "natural" than those without ellipsis (Hasegawa, 1993), and "the constant inclusion of these particles definitely does not reflect normal, unmonitored conversation" (Jorden & Noda, 1987:87). Whether the particles should be present depends on an unconscious decision by the speaker. The strong linkage of particle ellipsis with an informal and unmonitored style of speech suggests that ellipsis in Japanese is a property of the speaker's "vernacular"—the most systematic style of speech produced in situations where minimum attention is paid to speech (Labov, 1981). It has been demonstrated that the highly regular character of the vernacular is the most useful device for revealing inherent variability in the grammar of a particular language (Labov, 1969, 1972b).

Previous research on Japanese grammar, however, has paid much less attention to the variability of particle ellipsis than to the usage of particles (e.g., Kuno, 1973; Maynard, 1981; Shibatani, 1990), partly because of a common theoretical stance that ellipsis phenomena somehow deviate from the basic structures of a language and partly due to a misconception that ellipsis is mostly a matter of stylistic free variation in linguistic performance. Nevertheless, several studies have attempted to refute these misconceptions, illustrating that there are underlying principles governing variation in the ellipsis of -wa and -ga (e.g., Hinds, 1982; Kuno, 1972; Tsutsui, 1981, 1983, 1984). Although most of the earlier studies involve methodological problems in that their analysis of "intuitively" constructed sentences in isolation as primary data often does not conform to phenomena in natural speech (Hinds, 1982), a growing body of literature is beginning to focus on the vernacular (i.e., unmonitored, spontaneous conversations or narratives in informal settings) and to detect different types of principles of particle ellipsis (e.g., Fujii & Ono, 1994; Matsuda, 1992; Shibamoto, 1985, 1987, 1990). The present study is a further attempt to investigate rule-governed variation in particle ellipsis as a component of Japanese grammar, analyzing the vernacular.²

An interesting finding of previous studies is that ellipsis is correlated with the speaker's gender. Shibamoto (1985, 1990), analyzing peer-group conversational data, reported a quantitative difference in the ellipsis of *wa* and *ga* between men and women. Women deleted these particles 23.9% of the time, whereas men did so only 11.0% of the time. Furthermore, women more freely deleted the particles when objects are moved out of canonical SOV order to yield OSV order (men 9.1% vs. women 36.8%) (Shibamoto, 1985).

Shibamoto's (1985, 1990) studies, however, are compromised by three crucial methodological problems. First, Shibamoto's conclusion is based on the comparison of bare percentages without any investigation of statistical significance levels. Any generalization, particularly when derived from a large amount of quantified data, requires the statistical verification of frequencies of occurrence because of inherent problems of skewing in the distribution of sociolinguistic data elicited from uncontrolled natural speech (Sankoff, 1985). Our results must statistically indicate the differing ranges of occurrence of a particular linguistic feature (i.e., the probability of its occurrence) for each gender, and the difference in the ranges between them, if any, should then be examined in terms of the level of significance in order to rule out the possibility that the detected difference happened by chance.

Second, Shibamoto (1985, 1990) does not take into account the intersecting relationships between the occurrence of the variable under investigation and a large number of other types of factors that may simultaneously constrain its occurrence and compete with one another (Sankoff & Labov, 1979). In variable linguistic behavior, every token of a variable is governed by a number of factors, such as the nature of the grammatical context, discursive function of the utterance, topic, style, interactional context, and personal or sociodemographic characteristics of the speaker or other participants. The speaker's gender is obviously one of such factors that might affect particle ellipsis, but Shibamoto views the quantitative differences as being correlated solely with a fixed biological category—sex.

Apparently sex-related differentiation in language is actually a linguistic manifestation of the speaker's enormously complex social practices (i.e., gender). which stem from the interaction of a variety of contextual and sociocultural factors unique to the local community (Coates & Cameron, 1988; Eckert & McConnell-Ginet, 1992; Giles & Coupland, 1991; Graddol & Swann, 1989; McConnell-Ginet, 1988; Philips, 1980). The importance of focusing on the intersecting relationships among potential factors has been demonstrated in many studies of language and gender. For example, Milroy (1980), among others, showed that speakers' patterns of participation in the labor market and their interpersonal networks in the local community outranked their sex as the most important factor governing the use of local vernaculars (see also Bortoni-Ricardo, 1985; Nichols, 1980, 1983, 1984; Thomas, 1988). Eckert (1988, 1989) demonstrated that vowel changes in progress among adolescents in Detroit were better captured in terms of the interaction of sex and speakers' "acts of identity" (Le Page & Tabouret-Keller, 1985) through affiliation with adolescent groups (e.g., Jocks vs. Burnouts), and that the patterns of affiliation accounted for variation more efficiently than their socioeconomic class membership. Cameron and Coates (1988), based on Douglas-Cowie's (1978) study of a rural Northern Irish community, suggested that speakers' levels of education and their social aspirations were particularly important factors that should be accounted for in terms of interaction with the speaker's sex.

Thus, in sorting out the effects of the speaker's gender on the variable in question, researchers must take into account the effects of other potential factors simultaneously influencing the variable and take a close look at their relative strength. Until we fulfill this requirement, we cannot claim with certainty that the

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results depict a true picture of gender-based differentiation in language use. Simply correlating the rates of occurrence with the speaker's sex is very likely to produce a premature, oversimplified generalization.

According to Sankoff (1988), statistical inference is a useful heuristic tool to grasp the complex interaction of various factors and their roles in producing variation in speakers' choices. Multivariate analysis is a particularly useful method for statistically (or probabilistically) determining the interfactor relationships among a number of potential influencing factors and for telling us whether gender is a significant factor as compared with others. This technique involves a multiple regression analysis with stepwise selection of significant factors (Sankoff, 1986). This study accommodates these considerations in its design.

Finally, Shibamoto's (1985, 1990) findings on women's speech are limited in terms of the addressee effect or audience design factors (Bell, 1984) because her data are derived from conversations involving women exclusively. A number of past studies have suggested that cross-sex dyadic conversations as well as group heterosexual interactions can have a significant situational effect on dynamic gender-linked variability (Brouwer, Gerritsen, & de Haan, 1979; Eakins & Eakins, 1976; Edelsky, 1981; Fishman, 1983; Giles & Coupland, 1991; Swann, 1988; Zimmerman & West, 1975). There is no evidence that grammatical and sociolinguistic rules in same-sex interactions are carried over directly to mixed-sex interactions (Uchida, 1992). Coates (1988) suggested that the findings of research on same-sex and mixed-sex interactions should be carefully kept apart, and neither can be used independently for definitions of women's (or men's) language.

The present study supports this perspective, providing preliminary evidence for dynamic aspects of gender-related variation responding to specific types of audience design, such as cross-sex and single-sex dyadic conversations, and group heterosexual interactions. Furthermore, intraspeaker variability that is sensitive to these audience design factors (i.e., stylistic variation depending on the gender composition of the interaction) is found to be more significant in particle ellipsis than interspeaker variability based on gender (i.e., social variation between men and women). This result violates the style axiom of Bell (1984:151) in ways that promise to be fruitful in future research. I argue for a dynamic interpretation of a social variable, gender, which has consistently been viewed as a static entity in quantitative sociolinguistic studies of gender and language (Eckert & McConnell-Ginet, 1992).

The aim of the present study is twofold. The first goal is to account for rulegoverned variation in particle ellipsis based on vernacular data: that is, in naturally occurring peer conversations in informal settings. While a great majority of previous studies of Japanese particle ellipsis are concerned predominantly with the effects of functional constraints (e.g., degrees of closeness, perceptibility, sharedness, expectedness, etc. of information conveyed by a marked/unmarked NP), the present study also takes into account the effects of more mechanistic constraints of the surface structure (e.g., immediately preceding sound segments; presence or absence of other postpositional particles such as the accusative marker -o), a social factor (i.e., the speaker's gender), and stylistic factors (i.e., gender composition and audience design) to illuminate the complex processes underlying particle ellipsis. Conducting multivariate analyses, I investigate in what distinct ways all three types of factors affect ellipsis and determine their relative strength in contributing to the phenomenon. The hierarchy of constraints obtained is examined in light of two putatively universal sociolinguistic axioms (Bell, 1984; Preston, 1991).

My second goal is to determine whether gender-related variability truly exists in Japanese particle ellipsis (i.e., whether male/female differences are statistically significant), as has been consistently claimed in previous studies of singlesex interactions (Shibamoto, 1985, 1987, 1990). However, I do so with a focus on how gender-related variation would be susceptible to the types of gender mix involved in interaction (i.e., single-sex dyadic, cross-sex dyadic, and heterosexual group interactions) and on how variability is affected by audience design factors. My results indicate that, due to accommodative convergence among interlocutors, mixed-sex dyadic and group heterosexual interactions exhibit genderspecific patterns of variability quite distinct from those manifested in single-sex interactions. The claim that Japanese particle ellipsis is part of women's grammar is therefore an oversimplification of complex facts. Instead, the participant framework of an interaction is one of the essential factors to consider for a thorough description of the dynamics of gender-related linguistic variation.

PREVIOUS RESEARCH

Potential constraints on Japanese particle ellipsis and gender-linked variation

There are only a few studies specifically concerned with gender differences in Japanese particle ellipsis (Shibamoto, 1985, 1987, 1990).³ Shibamoto's (1990) study is more sophisticated than her (1985) study because it takes into account various grammatical environments and cognitive factors.⁴ Shibamoto investigated gender-related variation in the ellipsis of *wa* and *ga* in a set of same-sex conversations (a male group of three white-collar workers and a female group of three housewives). She defined potential structural and functional/interpretive features based primarily on such studies as Hinds (1982) and Tsutsui (1981, 1983)⁵ and examined their correlation with the speaker's sex, although without conducting any statistical tests. I review only the potential constraints on Japanese particle ellipsis that are relevant to the present research in connection with Shibamoto's (1990) findings about male/female differences in the ellipsis of *-wa* and *-ga*.

STRUCTURAL FEATURES

1. Word order

The scrambling of grammatical elements inhibits Japanese particle ellipsis (Tamori, 1977). Dislocation of NPs to the post-predicate position (i.e., SVO) disfavors ellipsis of the accusative case marker -o (Fujii & Ono, 1994; Tamori, 1977). Shibamoto (1990) assumed that canonical word order in Japanese (i.e., SOV/SV) promotes -wa/-ga ellipsis, but found that it tended to inhibit women's

particle ellipsis. Hinds (1982) also refuted Tamori's claim that scrambling inhibits particle ellipsis, arguing for the compensatory role of "case frame markers" (i.e., selectional restrictions).

- 2. Physical and psychological closeness of an NP to both the speaker and the hearer⁶ An NP identified as close to the speaker and hearer has a high degree of presupposition (i.e., both physically and psychologically close "contact" with the referent of the NP). Thus, its associated particles are more likely to be elided (Tsutsui, 1984). Tsutsui (1983) presented a similar hypothesis, the related utterance condition, regarding the ellipsis of the subject marker -ga, claiming that the more closely an utterance is related to the hearer, the more natural the ellipsis of -ga in the utterance is.
- 3. The degree of perceptibility of an NP to both the speaker and the hearer This constraint overlaps with the second one. If the NP in question is highly perceptible to both speaker and hearer at the moment of speech, particles are very likely to be elided. Such NPs are often deictic pronouns (Tsutsui, 1983, 1984). While information already established in the preceding context of discourse (e.g., demonstratives) is unlikely to be case-marked, in Fujii and Ono's (1994) study of the ellipsis of the Japanese accusative marker -*o*, non-referential/ non-specific information—namely an NP of low perceptibility to the interactant was also found to be very unlikely to be case-marked. This finding contradicts the general claim that Japanese postpositional particles are elided with NPs that carry familiar, perceptible information.
- 4. Emphasis on an NP in the clause The NP, which is the most emphatic element in the clause, tends to be marked by a particle. Speaker's emphasis is achieved by either eminent stress or discourse manipulation (Tsutsui, 1983). Similarly, an NP that carries salient information tends to be case-marked according to Fujii and Ono's (1994) analysis of -*o* marking.
- 5. Last NP condition

If an NP is (either overtly or covertly) preceded by another NP and immediately followed by its predicate, the particles are more likely to be elided (Tsutsui, 1983, 1984).⁷ The latter part of this constraint (i.e., no adjunct between a marked NP and its predicate) in particular has also been proposed as a factor promoting particle ellipsis by other researchers such as Watanabe (1986), Masunaga (1988), and Matsuda (1992). Masunaga claimed that an intervening element between the NP and its predicate results in low focus on the NP; therefore, its particle tends to be dropped.

6. Pragmatic function of an utterance as a whole

Sentences with sentence-final particles, commands, and questions are considered to involve the hearer, and thus they are more closely related to him or her. As is clear from the preceding arguments, the particles of the NP in such a clause are more likely to be elided (Tsutsui, 1983). Masunaga (1988), on the other hand, claimed that the use of sentence-final particles promotes particle ellipsis because of the speaker's focus on the sentence-final verb, and that the resulting defocusing of the preceding NP and its particle leads to particle ellipsis.

7. Formality of speech

Since formal style (-*desu/-masu* style) encodes interlocutors' psychological distance and low involvement in speech, particle ellipsis is less likely to occur (Tsutsui, 1983, 1984). Hinds (1976) claimed that particle ellipsis is relatively rare in situations where the speaker intends to show deference to the hearer, using formal style.

FUNCTIONAL/INTERPRETIVE FEATURES

8. General statement

Tsutsui's (1983) related utterance condition proposes that the closer to the hearer an NP is, the more ellipsis may take place. Again, general statements involve relatively low presupposition and psychological remoteness to information carried by the NP and inhibit particle ellipsis.

9. Expected information

If an NP provides information that the hearer expects, the information is assumed to be close to the hearer, and its particle tends to be dropped (Tsutsui, 1983).

10. Shared information

If information conveyed by an NP is shared by the speaker and the hearer, it is close to both speaker and hearer, and the particle of the NP tends to be dropped (Tsutsui, 1983, 1984). Shared information is not always derived from what has already been talked about in the context of conversation. First-mentioned NPs can also provide information shared between interlocutors based on their background or common knowledge. Masunaga (1988) claimed that an NP carrying shared information is defocused, and that its particle tends to be dropped.

Concerning the structural features, Shibamoto's (1990) analysis suggests that physical and psychological closeness of an NP to both the speaker and hearer (also categorized as a functional/interpretive feature), perceptibility of an NP to both the speaker and the hearer, and use of sentence-final particles positively affect women's use of ellipsis. For all these features, no significant effects on men's ellipsis rates were found. For men, only the last NP condition (i.e., an NP is the last NP before a predicate and is preceded by another NP) was found to be a facilitating structural factor. Shibamoto's assessment of significance levels of the effects, however, is not based on any statistical investigation.⁸

Shibamoto also differentiated the factors that inhibited ellipsis, according to sex. Canonical word order (i.e., SV/SOV) turned out to be an inhibiting structural factor only for women. For men, closeness and emphasis on an NP negatively affected their ellipsis rates.

Shibamoto also claimed that the functional/interpretive features promoting ellipsis differed for the two sexes. Again for women, closeness of information conveyed by an NP to the speaker and the hearer seemed to be a decisive factor promoting ellipsis. Conversely, this factor inhibited men's ellipsis rates: men tended to include the particles under this condition.⁹ For women's ellipsis, the inhibiting functional/interpretive factors were objectivity and general statement.

Shibamoto (1990:99–100) concluded that there is a sex-related difference "in the way men and women view sentences on a metalinguistic level." According to her, functional/interpretive features play a minimal role in men's ellipsis, and men's linguistic behavior is primarily sensitive to structural features. In women's ellipsis, on the other hand, the functional/interpretive features play a dominant role. A variable rule analysis of the phenomenon in the present study, however,

demonstrates that Shibamoto's conclusion is misleading due to the lack of close examination of the relative strengths of the intersecting factors as constraints on particle ellipsis.

The effects of gender composition on variability

The great majority of previous studies of gender differences in Japanese stem from the so-called subculture approach to gender differentiation in language.¹⁰ This approach attempts to define gender-related differences in linguistic behavior based on the comparative analyses of male-specific and female-specific speech patterns and thus tends to focus exclusively on same-sex peer interactions to write women's (or men's) grammars (Uchida, 1992). Taking separation of men's and women's subcultures and the resulting miscommunication for granted, however, prevents us from understanding how men and women from different subcultures manage to modify their own culture-specific speech patterns, adapt to the other group's norms, or resist them when engaging in cross-subcultural contact—everyday social practices involving members of the other group as well as same-sex peers (Eckert & McConnell-Ginet, 1992). The subculture approach is inherently incapable of accounting for this dynamic aspect of gender-related linguistic behavior—how women's (or men's) language is shaped in such situations as cross-sex conversations where the two subcultural norms interact.

Giles and Coupland (1991) stressed that what constitutes male and female language styles as heterogeneous entities should be studied in close linkage to contextual variables—sociopsychological makeups of the immediate context of interaction. Gender-linked language effects are not stable but subject to dynamic accommodative tendencies determined by the types of gender mix in the interaction. Although they have thus far received little systematic attention in variationist research (Rickford & McNair-Knox, 1994), the effects of the addressee's gender on variability are evident in a number of sociolinguistic and sociopsychological studies, providing supportive evidence for a dynamic view of gender and language (Abe, 1989; Bilous & Krauss, 1988; Brouwer et al., 1979; Brown, 1980; Erman, 1992; Mulac, Wiemann, Widenmann, & Gibson, 1988; Peng et al., 1981; Walters, 1989).

Past studies have commonly found that variation observed in single-sex interactions typically become less salient in mixed-sex interactions (Giles & Coupland, 1991): that is, subcultural sociolinguistic norms tend to be neutralized in cross-subcultural contact. For example, among the few studies of Japanese genderlinked differences that happen to include data from both types of gender composition (i.e., single-sex and mixed-sex), Peng et al.'s (1981) study of Japanese sentence-final particles illustrates clear changes in their subjects' behavior between the two types of interactions. In their use of these particles, which mark the speaker's gender in Japanese, both male and female subjects in mixed-sex interactions tended to use gender-neutral ones, avoiding gender-specific particles like *-wa* for women or *-zo* for men. Similarly, Brown's (1980) study of Tzeltal particles also found that in mixed-sex dyads male/female differences in the use of "strengtheners" and "weakeners" tended to disappear, whereas they were salient in single-sex dyads. In investigating gender-specific differences in conversational strategies in British English, Erman (1992) found a similar tendency. Women typically used pragmatic expressions to connect consecutive arguments, whereas men used them either as attention-getters or as signals for repair work, but this gender-linked difference turned out to be less salient in mixed-sex than in singlesex conversations.

The subculture approach, which is concerned only with variability manifested within a gender group, obviously neglects these dynamic stylistic aspects of genderrelated variation across different types of participant framework. It is essential for future research to take into account the intraspeaker variation formed by a speaker's accommodative response to the cross-subcultural contact.

The universal hierarchy of constraints

Based on a number of empirical studies of language variation, Bell (1984) proposed an axiom that defines the ordered relationship between two types of extralinguistic constraints: social and stylistic. His style axiom states that "Variation on the style dimension within the speech of a single speaker derives from and echoes the variation which exists between speakers on the 'social' dimension" (ibid.:151). The axiom essentially suggests that variation derived from stylistic factors (i.e., what denotes differences within the speech of a single speaker, such as attention paid to speech, involvement in speech, addressee design, the nature of topic, etc.) should be contained within the range of variation associated with the speaker's social characteristics (i.e., what denotes differences between the speech of different speakers, such as social class, age, gender, ethnicity, etc.). In other words, patterns and strength of variation based on the speaker's social characteristics outrank those based on stylistic variation and supply the raw material for stylistic variation. The social characteristics of the speaker set the outer limits of possible variation for any stylistic variations in that speaker's speech.

Adapting Bell's hypothesis, Preston (1991:36) proposed a status axiom, which further limits the relationship among constraints: "Variation on the 'status' dimension derives from and echoes the variation which exists within the 'linguistic' dimension." This axiom suggests that variation derived from the speaker's social characteristics should be contained within the range of variation determined by linguistic environments (i.e., phonological, morphological, and syntactic constraints). In the relationships between linguistic and social factors, the former are primary and stronger as constraints on variation and provide the outer limits for socially determined variation.

Thus, the strong version of the two axioms is meant to provide a theory of the universal hierarchy of constraints, which proves true for linguistic variation in almost any communicative setting. The axioms predict that language variation is constrained most strongly by linguistic environments, for they represent universal and language-specific conditions on the dependent variable. The second strongest constraints on variation are social, for they represent more or less permanent

aspects of the speaker's identity and group membership. Finally, stylistic constraints are weakest, for they control only the selection of a point in fluctuating speech situations (e.g., topic, attention paid to speech, audience design) (Bell, 1984; Preston, 1991). The most significant utility of the axioms concerns their role in developing an integrative sociolinguistic theory (Rickford & McNair-Knox, 1994). Such a theory would be capable of predicting the patterns of linguistic variation, testing empirical validity of future work, and providing the researcher with important clues for conducting further analyses of the causes of unexpected patterns when the axioms are violated. The present study is conducted with the implications of these axioms in mind.

THE PRESENT STUDY

Methodology

Particle ellipsis can be interpreted in terms of variable rules because it meets the three criteria for a variable rule analysis (Sankoff, 1986). First, the variable phenomenon is basically derived from the speaker's choice between the two variables (i.e., use or ellipsis of the particles) in his/her performance. Second, a choice of either inclusion or ellipsis is not immediately predictable from looking at a variety of contextual information (i.e., the phonological environment, the syntactic context, discursive function of the utterance, topic, style, interactional situation, sociodemographic characteristics of the speaker or other participants), which would simultaneously affect that speaker's choices. We need to know the intersecting relationships among these factors as constraints on the phenomenon in question. Third, the speaker's choice is not based on a random application of optional rules, but seems to recur with some regularities and tendencies in the raw speech data.

One of the primary concerns of this study is to find out when and in what contexts particles are more likely to be dropped or retained. It should also be stressed that the phenomenon may be affected by a variety of linguistic/pragmatic, social, and stylistic factors simultaneously, and our task is to detect meaningful interactions among possible variables in terms of their relative effectiveness in the speaker's ellipsis of the particles. The multivariate analysis I used simultaneously considers the effects of all of the factors as well as the correlations between them and estimates the weight of each variable in relation to the others (Myhill, 1992).

I used the statistical program GOLDVARB, the Macintosh application of variable rule analysis (Rand & Sankoff, 1990). This program includes two types of applications. One type calculates probability weights for each factor and assigns it a value from 0.00 to 1.00. A probability of less than .50 indicates that the factor disfavors the operation of the rule; a probability of greater than .50 indicates that the factor favors the rule; and a probability close to .50 means that the factor is neutral. This first type of application also provides the average chi-square per cell, which indicates the degree to which the variables considered account for the data (Preston, 1989). The other type of application is a stepwise regression analy-

Туре	Number of Participants	Number of Tokens
l heterosexual group conversation Subtotal	4 males 3 females	244 (60 + 58 + 63 + 63) 237 (67 + 116 + 54) 481 tokens
2 cross-sex dyadic conversations Subtotal	1 male + 1 female 1 male + 1 female	226 (male: 124; female: 102) 244 (male: 117; female: 127) 470 tokens
2 same-sex dyadic conversations Subtotal	2 males 2 females	228 (males: 113 + 115) 139 (females: 51 + 88) 367 tokens
Total	8 males + 7 females	1318 tokens (males: 748; females: 570)

TABLE 1. Summary of types of data

sis, which sorts out the groups of variables whose distributions of factor weights are statistically significant. I used both types of application.

Data

Since a primary focus of this study was the effect of the gender composition of conversational groups on particle ellipsis, spoken data from three types of conversational settings were analyzed.¹¹ The first corpus was a mixed-sex conversation in a large informal gathering of friends at the apartment of one of the participants. The participants were 9 male (including the author) and 7 female Japanese graduate students at the University of Arizona. All the participants were sitting around a big coffee table; a small tape recorder was placed in the center of the table together with food and drinks.¹² The participants were told that the author needed Japanese data for future research. The recording lasted more than 2 hours, and the participants seemed to relax quickly, ignoring the recorder, and started to engage in very active conversations. Subsequently, 4 male and 3 female speakers were selected as subjects because of large amounts of speech they produced.¹³ The number of tokens for each speaker ranged from 54 to 116 (see Table 1), with a total count of 481. All the speakers were mutual friends, ranging in age from late twenties to early thirties.

The next type of conversational setting involved two cross-sex dyadic conversations. One was a self-recorded 45 minute face-to-face casual conversation between a 26-year-old woman and a 20-year-old man.¹⁴ The friends, both students, were talking in the cafeteria on the University of Arizona campus. They produced a total of 226 tokens, 102 for the woman and 124 for the man. The second cross-sex dyadic conversation was a self-recorded casual phone conversation between a 24-year-old woman and a 39-year-old man. This conversation lasted for 45 minutes and yielded a total of 244 tokens, 127 for the woman and 117 for the man. I decided to ignore the age difference between the participants,

which may have affected equality in power distribution. The 24-year-old female speaker characterized the 39-year-old male speaker as a "friend" to whom she often spoke on the phone. They used to be colleagues at the same company in Japan, and at the time both lived in different states in the United States. The atmosphere and content of their conversation and the way the woman spoke to the man sounded very casual and friendly; I did not find any reason to consider the man as having more power than the woman in their relationship simply because he was older.¹⁵

The final type of interaction included two same-sex dyadic casual conversations between close friends. The female conversation, self-recorded for about 30 minutes, involved two close friends in their early twenties who were classmates in the ESL program at the University of Arizona. They produced a total of 139 tokens (51 + 88). The male conversation also involved two close friends, both University of Arizona graduate students in their early thirties. The conversation was selfrecorded, lasted for about 45 minutes, and yielded 228 tokens (113 + 115).

These conversations are consistent in terms of the formality of setting and topics and the equality in social status and power. All the conversations are informal with casual topics being talked about. The relationships among the participants are equal in terms of power/status distribution; all the participants are peers or acquaintances who are students at the same university or otherwise are old colleagues. All of the social factors favor the speaker's production of the vernacular. Note, however, that there are three different types of participant framework: cross-sex and single-sex dyadic conversations as well as a heterosexual group conversation. To avoid the observer effect, I ignored the first 5 minutes of the taped conversations before I began coding tokens of appearance/non-appearance of the particles along with the following pertinent independent factors.

I selected eight factors as potential independent variables in order to take into account a wide range of linguistic dimensions (Bell, 1984:145–146): (1) linguistic, including Shibamoto's (1990) structural and functional/interpretive features (see the definitions in note 5), (2) social, and (3) stylistic factors. There were five linguistic (four structural and one functional/interpretive), one social, and two stylistic factors. This selection was also affected to a large extent by an operational law of variable rule analysis that factors under investigation do not interact with one another (Preston, 1989). In what follows, I present the eight factors. The research or comments cited for each factor briefly explains my coding system and motivation for its inclusion in this study.

LINGUISTIC FACTORS

(structural factors in Shibamoto, 1990)

1. Accusative case marking -*o* concurring with -*wa/-ga* ellipsis in the same clause (yes/no/not applicable)

Matsuda (1992) reported a statistically significant correlation between nominative and objective case marking. This result is contradicted by Hinds' (1982) perspective of functional economy, which claims that Japanese ellipsis is motivated by redundancy of information; therefore, the ellipsis of the accusative marker should inhibit the ellipsis of -wa/-ga. "N/A" is for intransitive predicate. The present study investigated this issue further.

- 2. Dislocation of noun phrase and predicate ellipsis (yes/no/ellipsis) Scrambling of grammatical elements inhibits Japanese particle ellipsis in general (Fujii & Ono, 1994; Tamori, 1977). By contrast, Shibamoto (1985, 1990) reported that canonical word order in Japanese (i.e., SV/SOV) is negatively correlated with women's ellipsis. Postposing of subject or topic NPs favors ellipsis (i.e., VS/OSV/OVS). Utterances with the entire predicate elided were also very frequent in my data. The phenomenon of predicate ellipsis was typical of the casual mode of conversation, regardless of the speaker's sex (Peng et al., 1981).
- 3. Immediately preceding sound (a, i, u, e, o, N)

A number of variationist studies have demonstrated that the preceding phonological environment functions as a strong constraining factor for variable particle ellipsis (see a review of earlier studies of variability in final stop deletion in English in Guy, 1980, 1990, 1991). Such phonological conditioning seems relevant to particle ellipsis as explored by Matsuda (1992), who did not find it statistically significant but identified a consistent phonological differentiation in -o ellipsis. The possible phonological environment in Japanese includes the five vowels and the syllabic nasal.

- 4. Speech act categories (informative/interrogative/emphatic/inferential/mocking) As Matsuda (1992) and many others (e.g., Hasegawa, 1993) pointed out, particle ellipsis seems to be somehow correlated with the pragmatic force of the utterance. Yamashita (1979) claimed that the ellipsis of Japanese particles involves very high contextual dependency, and thus pragmatic factors are the most decisive constraint. I categorized the utterances into five relatively common types; the sentence is uttered for the purpose of providing information for the interlocutor (informative), requesting that the interlocutor provide information (interrogative), re-emphasizing or confirming an utterance (emphatic), inferring information conveyed by an utterance (inferential, and teasing the interlocutor (mocking). Though a great deal of speech acts in Japanese take advantage of sentence-final particles (McGloin, 1986, 1990, 1993), a number of utterances performed a certain act by virtue of marked intonation rather than through sentence-final particles.
- 5. Information status of the NP (brand-new/evoked/unused) (functional/interpretive factor in Shibamoto, 1990)

As discussed in many previous studies (e.g., Fujii & Ono, 1994; Hinds, 1982; Masunaga, 1988; Tsutsui, 1983), information status of the NP, especially sharedness and familiarity of information, seems to play an important role in Japanese particle ellipsis. I categorized NPs based on Prince's (1992) taxonomy of information status: brand-new information (i.e., an NP evoking entities which have no prior mention in the conversation and have never been heard of by the addressee), evoked information (i.e., an NP evoking entities which have already been mentioned in the prior conversation), and unused information (i.e., an NP evoking entities which have no prior mention but are already known or shared between interlocutors).¹⁶

SOCIAL FACTOR

6. Speaker's gender (male/female)

STYLISTIC FACTORS

Gender composition (male only/female only/mixed)
 I investigated the effect of the speaker's and the addressee's gender on variability.

	Individual Factors	% -wa/-ga Elided	Probability	Significance
Factor group 1 Objective case (- <i>o</i>) marking	No marking N/A Marking	48 (19/40) 25 (313/1251) 19 (5/27)	.73 .49 .41	<i>p</i> < .01
Factor group 2 NP dislocation and predicate ellipsis	Yes No Predicate ellipsis	48 (32/67) 25 (294/1173) 14 (11/78)	.67 .51 .25	<i>p</i> < .01
Factor group 4 Speech act categories	Interrogative Emphatic Inferential Mocking Informative	40 (86/214) 37 (47/128) 27 (8/30) 22 (2/9) 21 (194/937)	.69 .62 .53 .53 .49	p < .01
Factor group 5 Information status	Unused Evoked Brand-new	33 (79/243) 31 (119/384) 20 (139/691)	.58 .56 .44	p < .01
Factor group 7 Gender composition	Female only Mixed Male only	34 (47/139) 27 (259/951) 14 (31/228)	.61 .53 .30	p < .05
First run: Factor groups Input probability: .241 Chi-square/cell: .8417 Mean percentage: 26 (32 N = 1318	1, 2, 3, 4, 5, 6, 8 37/1318)	Second run: Factor g Input probability: .2 Chi-square/cell: .86 Mean percentage: 20 N = 1318	groups 1, 2, 3, 4 33 05 5 (337/1318)	ł, 5, 7

TABLE 2. Significant constraints on particle ellipsis

8. Audience design (presence/absence of auditors)

According to Bell's (1984) theory of participant framework, interactions taking place with or without some audience would affect the individual's speech style differently. I investigated audience design effects on particle ellipsis.

Results and discussion

Hierarchy of constraints. First, to obtain an overall picture of the relative strength of the constraints on particle ellipsis, I conducted GOLDVARB analyses of all tokens together from the three types of interactions. The results are shown in Tables 2 and 3. Because of possible factorial interaction, I carried out two separate runs to isolate factor groups 8 (audience design) and 6 (speaker's gender) from factor group 7 (gender composition). Five factor groups (1, 2, 4, 5, 7) out of eight were selected as highly significant in the stepwise regression analyses (p < .01 for factor groups 1, 2, 4, 5; p < .05 for factor group 7). Three factor groups (3, 6, 8) were found to be insignificant.

The chi-square per cell is fairly low: .8417 for the first run and .8605 for the second run (Table 2). According to Preston (1989:16), the value indicates the degree to which our hypothesis about which factors constrain the variation accounts for the actual data. The lower than 1.0 it is, the surer we may be that

	Individual Factors	% -wa/-ga Elided	Probability	Significance
Factor group 3	и	25 (33/134)	.54	
Preceding sound	е	30 (69/229)	.53	
	п	28 (52/186)	.52	
	0	24 (80/337)	.49	
	a	24 (30/124)	.48	
	i	24 (73/308)	.47	n.s.
Factor group 6	Female	28 (160/570)	.53	
Speaker's gender	Male	24 (177/748)	.48	n.s.
Factor group 8	Auditor absent	26 (220/837)	.52	
Audience design	Auditor present	24 (117/481)	.47	n.s.

TABLE 3. Non-significant constraints on particle ellipsis

additional independent variables need not be sought. Thus, both scores are low enough for us to feel confident of the explanatory power of the independent variables under investigation.

The first significant factor selected is the correlation between particle ellipsis and accusative case marking. Ellipsis of the accusative case marker highly promotes the ellipsis of -wa/-ga with a weight of .73, whereas the presence of the marker inhibits their ellipsis with a weight of .41. This tendency confirms Matsuda's (1992) similar finding: the concurrence of ellipses of the accusative (-o) and nominative (-ga) markers.

At first glance, this result runs counter to functional considerations (Kiparsky, 1972), according to which there is a tendency for information that encodes semantic/functional distinctions to be retained in surface structure. That is, in the present case, if one of the two arguments is deprived of its postposition, the other should be more inclined to retain its proposition so that the functional relationship between the arguments can be understood easily by the listener. The actual variation manifested here, however, exhibits the opposite pattern.

A plausible interpretation of the phenomenon comes from Hinds (1982). He maintained that grammatical relationships in Japanese are marked by any of the following three factors: postpositional particles, word order, and so-called case frame markers (i.e., selectional restrictions) (e.g., only animate NPs being associated with affective verbs such as *suki da* 'like') (Hinds, 1982:167). While the scrambling of major syntactic constituents is very common in conversational Japanese, a correct interpretation can be achieved as long as at least one of the other two factors (postpositional particles and case frame markers) is present. It follows that the particles can be deleted whenever either of the other two, word order or the case frame marker, specifies the grammatical status of unmarked nominals in an utterance.

The GOLDVARB analysis of factor group 2 readily substantiates this interpretation of the result. The weight for predicate ellipsis in factor group 2 indicates that it inhibits particle ellipsis very strongly with a weight of .25. This finding follows straightforwardly from Hinds's (1982) theory. Given the ellipsis of the predicate, which by virtue of its selectional restrictions clarifies the roles of any overt NPs, particle ellipsis would result in serious ambiguity. Without the predicate, word order is incapable of clearly marking the semantic relationships between NPs. The postpositional particles are therefore required to indicate the grammatical status of the NP.

The results for factor group 2 also demonstrate that dislocation of NPs to the post-predicate position (i.e., postposing) promotes particle ellipsis with a weight of .67. They show that canonical word order does not necessarily favor particle ellipsis (.51), contrary to past studies (Fujii & Ono, 1994; Tamori, 1977). In the present study, postposed NPs often appear to encode appended information as an afterthought, as is common in colloquial speech (Shibatani, 1990). An example is given in (3) (SFP stands for sentence-final particle).

(3) a. Itta koto nai na, atashi (wa). went fact none SFP I
'I have never been there.'
b. Yarimasu nee, ano oyaji (wa). do SFP that old man
'Even an old man like that can do (it) well, can't he!?'

Despite the non-canonical word order of the utterances, the presence of the particle *-wa* is immaterial for the correct interpretation of the sentences because of the obvious semantic relationship of the postposed NPs with the preceding predicates (*itta* '[someone] went', *yarimasu*, '[someone] does [it]'), which require animate nominals to satisfy their selectional restrictions.

This positive correlation between the -wa/-ga ellipsis and NP postposing directly contradicts the claim of Tamori (1977) that scrambling inhibits Japanese particle ellipsis due to ambiguity or change in meaning. For the ellipsis of the accusative marker -o in particular, Tamori (1977) and Fujii and Ono (1994) both maintained that dislocation of NPs disfavors ellipsis. As shown so far, however, this constraint (i.e., inhibiting effects of scrambling on particle ellipsis due to semantic ambiguity) can be ruled out on the basis of compensatory aid from selectional restrictions of the predicate (Hinds, 1982:163–173). That is, as long as there is no issue of semantic ambiguity, the particles are essentially redundant. This would explain why scrambling does not necessarily cause semantic ambiguities and why eliding the accusative marker does not increase the likelihood of -wa/-ga marking. In addition, positive effects of non-canonical word order are consistently identified in particle ellipsis by women and no effect of variable word order is observed in men's ellipsis in Shibamoto (1985:127, 1990:96). The present analysis agrees with these two studies.

In order to resolve this disagreement, I question the quantity of samples on which Tamori's (1977) and Fujii and Ono's (1994) claim is based. Tamori (1977:258–260) did not conduct any quantitative analysis to obtain the relative frequencies of particle ellipsis between canonical and non-canonical word orders.¹⁷ Fujii and Ono (1994:13–14) analyzed a total of only 9 tokens, 6 of which were found to be marked by *-o* and the remainder of which were un-

marked. They claimed that the lexical types of post-predicate NPs override the word order factor; all the marked NPs are regular nouns, whereas the unmarked NPs are demonstrative, demonstrative plus nominalizer (*sonna koto* 'such a thing'), or indefinite pronoun (*nanka* 'something'). More data, however, yield a more complex picture. In the present study, 67 occurrences of post-predicate NPs include 35 (52%) marked NPs, 8 (23%) of which are either demonstratives or person pronouns and 6 (17%) of which are clausal NPs (including NPs with relative clauses and nominalized NPs). The remaining 21 (60%) NPs are regular nouns. Among 32 unmarked NPs, 11 (34%) are regular nouns and the remaining 21 (66%) cases are either demonstratives or person pronouns.

In addition to the necessity of analyzing a large number of dislocation occurrences for a valid generalization, another possible resolution of the disagreement might be derived from examining gender-linked differentiation in this particular phenomenon. One of the results of the present study (to be discussed in detail later) is that NP dislocation favors particle ellipsis in women much more strongly than in men (.72 vs. .60) (see Tables 8 and 9). This finding also coincides with the findings of Shibamoto (1985, 1990).

The statistically confirmed degree of concurrence of -wa/-ga and -o ellipsis in a single clause (factor group 1) also sheds light on the intriguing interplay between functional factors (e.g., semantic status of two overt NPs) and non-functional factors (e.g., two consecutive positions of particles in a string of two NPs) in governing linguistic variation. The outcome of the present analysis yields an exact parallel with generalizations from past studies of morphosyntactic variation in Western languages. First, Kiparsky's (1972) functional compensation hypothesis, according to which there is a tendency for semantically relevant information to be retained in surface structure, is too simplistic to account for complex relationships among various intersecting factors including non-functional ones. Moreover, nonfunctional factors tend to outweigh functional ones. For example, Poplack's (1980a, 1980b) studies of the deletion of plural markers in Puerto Rican Spanish demonstrated that functional factors (i.e., whether or not the deletion of the markers leads to ambiguity) are rather weak compared with positional factors. Given a noun phrase string, the deletion of preceding markers strongly promotes the deletion of succeeding markers, whereas the presence of the preceding markers inhibits the deletion of the succeeding markers. This tendency towards local redundancy in surface structure or preserving parallelism in morphosyntactic elements is considered to minimize mental effort. Such mechanical operations are cognitively less demanding, as was maintained by Weiner and Labov (1983), who found a similar tendency in the variable use of the agentless passive in American English. The frequent concurrence of -wa/-ga and -o ellipsis in the present study provides another strong piece of evidence for this common phenomenon-the mechanical process of preserving parallelism in surface structure over functional considerations.

Second, while the functional compensation hypothesis is found to play a minor role for a lack of surface morphosyntactic distinctness, it consistently plays an important role at a different linguistic level (Bayley & Pease-Alvarez, 1997). As is evident from the discussion based on Hinds's (1982) model, Japanese particle ellipsis constantly involves rigid compensatory relationships with the other two disambiguation mechanisms (i.e., word order and case frame markers). To achieve successful communication, the speaker, who elides a great deal of linguistic elements in ordinary conversation, must make constant judgments regarding which indicator is required or whether particle ellipsis is allowed primarily on the basis of the flow of discourse or the entire context of conversation. This cognitive operation is exactly what the functional compensation hypothesis would predict, but it operates at a higher level than the local morphosyntactic alternations. Furthermore, functional factors tend to eliminate redundancy, in contrast to positional factors, which favor local redundancy (Poplack, 1980b). That is, given the three indicators, it seems likely that the presence of even one of them is considered sufficient or even favorable in helping the listener arrive at a correct interpretation of an utterance.

Now let us return to factor group 5 in Table 2. As discussed earlier, the great majority of previous studies of Japanese particle ellipsis have focused on the effect of the information status of the NP associated with the particle. The results of factor group 5 (information status of NP) support the unanimous claim that highly perceptible, psychologically close, or shared information favors particle ellipsis (Fujii & Ono, 1994; Shibamoto, 1990; Tsutsui, 1983, 1984). However, the present analysis reveals that these functional/interpretive factors are relatively weak: the range of variability is .14 (.58 – .44). By comparison, the range of variability for structural factors is .32 (.73 – .41) for factor group 1 (objective case marking) and .42 (.67 – .25) for factor group 2 (NP dislocation and predicate ellipsis). The analysis of factor group 5 indicates that the particles marking NPs that represent evoked information are also likely to be elided (.58). The particles marking NPs that convey brand-new information, on the other hand, are less likely to be elided (.44).

The next significant factor group selected is factor group 4 (speech act categories). Overall, the outcome agrees with the claims of previous studies: in utterances that highly involve the speaker and the hearer, particles are likely to be elided (Matsunaga, 1988; Tsutsui, 1983). Table 2 shows that interrogatives greatly favor particle ellipsis (.69). This coincides with Yamashita's (1979) observation that Japanese postpositional particles appear to be elided most frequently in questions and requests. Similarly, emphatic utterances also strongly promote particle ellipsis (.62), which coincides with Matsuda's finding of the highest correlation between the use of emphatic particles and -o ellipsis. Informative utterances, which express no particular pragmatic force, display an almost neutral effect (.49), and the remaining two types have equally weak positive effects (inferential: .53; mocking: .53).

The final significant point concerns gender-linked variation. Table 3 shows that the speaker's gender (factor group 6) is not selected as significant (women: .53, men: .48), which dramatically counters Shibamoto's (1985, 1990) generalization. Factor group 7 (Table 2), on the other hand, shows that it is the type of gender composition that governs apparent gender-linked variability in particle

	Single-sex Dyadic	Mixed-sex Dyadic	Heterosexual Group
Women	34% (47/139)	31% (60/194)	22% (53/237)
	Weight: .72 ($p < .05$)	Weight: .49 (n.s.)	Weight: .48 (n.s.)
Men	14% (31/228)	30% (82/276)	26% (64/244)
	Weight: $.36 (p < .05)$	Weight: .51 (n.s.)	Weight: .53 (n.s.)
Total	21% (78/367)	30% (142/470)	24% (117/481)

TABLE 4. Particle ellipsis in three participant frameworks

ellipsis to a statistically significant extent (p < .05): women interacting with other women are likely to elide particles with a weight of .61, whereas men interacting with other men are much less likely to do so with .30. Speakers engaged in mixed-sex interactions display a positive but weak tendency to elide particles with a value of .53.

Though this finding does not directly contradict Shibamoto's findings, which are derived exclusively from single-sex conversations,¹⁸ it does restrict her generalization that Japanese particle ellipsis is a property of women's language. The speaker's stylistic response to the gender-linked participant framework of the interaction exerts a much stronger influence than the speaker's static sex. Women's advanced ellipsis of Japanese postpositional particles and men's lag hold true only when they respond to the sociolinguistic norms of their own subculture, but the results show that the identical norms are unlikely to be favored in cross-subcultural contact (Coates, 1988; Uchida, 1992).

This dynamic property of gender-linked variation in Japanese particle ellipsis can be delineated more clearly by comparative analyses of the phenomenon across three different types of participant framework: the single-sex dyadic, mixed-sex dyadic, and heterosexual group conversations in Table 4 and Figure 1. Figure 1 visually represents variability shifts across the three types of participant framework. Regression analyses (Table 4) select the speaker's gender as a significant factor group only in single-sex dyadic conversations (women: .72; men: .36; p < .05).¹⁹ In the other two types, the GOLDVARB weights of both sexes are very close to neutral (women: .49, .48; men: .51, .53, in mixed-sex dyadic and in heterosexual group conversations, respectively).

What is observed here is an obvious case of mutual accommodation—male and female convergence typical of mixed-sex dyads in other languages (Giles & Coupland, 1991). Between single-sex and mixed-sex dyadic conversations, the rate of ellipsis among men increases by 16%, accommodating the female interlocutor's higher ellipsis rate, whereas the rate among women is also slightly modified with a 3% decrease. As a result, both sexes find common ground at around 30% ellipsis. Accommodative convergence takes place in heterosexual group conversation as well. The overall frequency of particle ellipsis is relatively low (24%), presumably due to the effects of auditors (factor group 8: auditor present, .47; auditor absent, .52; see Table 3) and to the likely use of monitored, canonical



FIGURE 1. Mutual convergence in particle ellipsis across three participant frameworks.

Rank	Factor Group	Range	Type of Factor
1	NP dislocation/predicate ellipsis	.42	Linguistic
2	Concurrence of accusative case marker	.32	Linguistic
3	Gender composition	.31	Stylistic
4	Speech act categories	.20	Linguistic
5	Information status	.14	Linguistic
6	Preceding sound (n.s.)	.07	Linguistic
7	Speaker's gender (n.s.)	.05	Social
8	Audience design (n.s.)	.05	Stylistic

TABLE 5. The variation space of eight factor groups

speech in large-group interactions disfavoring particle ellipsis (Hinds, 1976). As compared with the rates of single-sex interactions, women shift down significantly to 22% (12% decrease), whereas men conversely shift up to 26% (12% increase), even slightly exceeding the women's modified rate. The finding that the speaker's sex per se is not a statistically significant social variable (Table 3) results from this accommodative neutralization of inter-subcultural differentiation.

The present results have theoretical implications for putatively universal sociolinguistic axioms. An examination of the range of variation (Table 5), which is an indication of a factor group's overall strength, reveals a violation of the style axiom (Bell, 1984) and the status axiom (Preston, 1991). Table 5 shows that the most influential factor group, the one with the greatest range of variation, is linguistic—NP dislocation and predicate ellipsis (.42)—as the axioms predict. No other factor group exceeds this range, including the social factor, the speaker's gender, which has a range of .05; thus, the status axiom is confirmed. On the other hand, .31, the range for gender composition, a stylistic factor group, far exceeds .05, the range for speaker's sex, thereby violating the style axiom.

I argue that the cause of this violation is the problematic interpretation of gender as a fixed social variable (i.e., the biological category of sex) in the traditional quantitative sociolinguistic paradigm as well as in the construction of the axioms. Based on extensive reviews of past variationist research, neither Bell (1984) nor Preston (1991) interpreted the social variable of gender as a dynamic property, subject to the effects of the addressee's gender or the participants' gender cohort. As the present analysis demonstrates, gender-linked linguistic behavior is not a static, monolithic entity but is variably modified according to the types of subculture contact in the interaction-whether the addressee shares genderlinked membership produces crucial effects on variability. In some communicative settings such as in single-sex interactions, gender as a social division is most evident and gender-linked differentiation in speech is most marked, maintaining ingroup norms. In other settings such as in cross-sex interactions, however, the division becomes fuzzier and readily overlaps. Eckert and McConnell-Ginet (1992) maintained that the content of gender as dynamic social categories should be interpreted as being constantly constituted and transformed in various ways as speakers engage in various social practices. The present analysis also demonstrates that gender produces effects that are far from categorical and that vary from context to context. The traditional treatment of gender without insight into its interplay with audience design factors is likely to miss a dynamic dimension of this social category-systematic intragender variation. In conclusion, I present a summary of the hierarchy of constraints favoring and disfavoring Japanese particle ellipsis in Table 6.

An additional variable. While the utility of cognitive properties of sociolinguistic variables for stylistic analysis has long been known since Labov (1966, 1972a), sociolinguistic studies of Japanese have generally neglected the cognitive nature of sociolinguistic variables and its relations with variability shifts across different stylistic dimensions. Studying Israeli Hebrew speakers, Yaeger-Dror (1988, 1993) maintained that the degree of cognitive saliency of sociolinguistic variables is a useful heuristic tool for distinguishing among a variety of accommodative tendencies. Confirming the analysis in Prince (1987), Yaeger-Dror (1993) found that a variable occurring in cognitively salient linguistic environments is likely to be manipulated by speakers undertaking conscious accommodation (e.g., consciously converging toward ingroup norms in an effort to promote ethnolinguistic vitality and diverging from the mainstream outgroup norms), whereas a variable occurring in less salient environments is likely to be involved in unconscious accommodative shifts (e.g., unconsciously converging to the mainstream outgroup norms that are the community's standard).

The target of the present study, postpositional particle ellipsis, is a variable that occurs in the cognitively least salient linguistic environment according to Yaeger-Dror's (1993) criteria: unaccented, closed-class words are less cogni-

Weight	Promoting Factors	Inhibiting Factors
	Objective case unmarked	
.7		
	Interrogative speech act	
	Dislocation of noun phrases	
	Emphatic speech act	
	Female only interaction	
.6		
	Unused information	
	Evoked information	
	Inferential or mocking speech act	
	Mixed-sex interaction	
.5		
		Brand-new information Objective case marked
.4		
		Male only interaction
.3		
		Predicate ellipsis
.2		

TABLE 6. Hierarchy of constraints on particle ellipsis

Note: Constraints producing nearly neutral effects (either .51 or .49) are not included.

tively salient. The following comparative analysis of an additional, relatively more cognitively salient, sociolinguistic variable—alternations between directand distal-style predicates— shows that this variable produces stylistic variation across the three types of participant framework totally different from the perfect mutual convergence of inter-subcultural differentiation in particle ellipsis. The stylistic shifts with the cognitively more salient variable typically exhibit divergent tendencies, allowing speakers to display the distinctiveness of their gender-linked identity. The correlation between the cognitive status of the variables and the resultant accommodative tendencies provide further empirical support for Yaeger-Dror's generalization.

Table 7 describes the frequency distribution of distal-style (polite, honorific, outgroup-encoding) predicates in proportion to that of direct-style (casual, intimate, ingroup-encoding) predicates across the three types of gender mix in interactions, with a schematic representation in Figure 2. Japanese distal style indicates that "the speaker is showing solicitude toward, and maintaining some linguistic distance from, the addressee" (Jorden & Noda, 1987), characterizing the speaker as being less direct and more formal with a sign of deference to the person(s) addressed and/or the topic of conversation. Japanese direct style, on the other hand, allows the speaker to talk directly, intimately, familiarly, abruptly, or carelessly to the addressee(s) and/or about the topic. Compared to postpositional particles in Japanese, the cognitive status of this variable is more salient, in

	Single-sex Dyadic	Mixed-sex Dyadic	Heterosexual Group
Women	12% (22/181)	44% (73/165)	32% (24/75)
Men	26% (33/128)	24% (51/212)	22% (19/88)
Total	18% (55/309)	33% (124/377)	26% (43/163)

TABLE 7. Use of distal-style predicate in three participant frameworks



FIGURE 2. Women's divergence in use of distal-style predicate across three participant frameworks.

that the alternations perform multiple sociolinguistic functions, including the encoding of social, situational deictic information (e.g., *uchi/soto* [ingroup/ outgroup] membership) in context (Sukle, 1994; Wetzel, 1988, 1994) as well as the speaker's polite, honorific attitudes (Ide, 1990). What is observed here is consistent divergent accommodative shifts from single-sex to the two types of cross-sex interactions; the shifts are salient only in accommodation by women. While women use distal-style predicates less than men in single-sex interactions (12% and 26%, respectively) (p < .025), women drastically increase the rate to 44% (32% increase), exceed men (24%), and eventually diverge from them in mixed-dyadic conversations (p < .025). In heterosexual group conversation, similar divergence is also observed; the rate of women (32%) is 20% higher than that in their single-sex interactions and 10% higher than the rate of men (22%) in the identical participant framework (p > .1).²⁰

Such synchronic occurrence of the two types of accommodative shifts (i.e., convergence in particle ellipsis and divergence in predicate styles) is not an uncommon phenomenon across languages (Giles, 1980). Giles and Coupland (1991)

noted that the two types should not be considered mutually exclusive; there are often cases where the two types of phenomena proceed simultaneously in an interaction, though involving different types of sociolinguistic variables. In Japanese, divergent shifts are also documented in Abe's (1989) study of another cognitively salient variable-"participant roles" in Japanese conversations involving male/female college students. She found that gender-specific behavior (as diagnosed on the basis of single-sex interactions) is emphasized rather than reduced in mixed-sex interactions. Male students tend to use affect-oriented strategies (i.e., to provide support for the interlocutor to maintain the floor, typically by showing rapport [e.g., backchannels]) slightly more than female students. By contrast, female students use function-oriented strategies (i.e., to push a conversation forward or to contribute to active, smooth conversation, maintaining a chain of relevant topics) more than male students in single-sex interactions.²¹ However, both female and male students tend to "take over" the outgroup's strategies in mixed-sex interactions.²² Men tend to take more initiative in advancing a conversation, whereas women tend to place themselves backstage in the conversation by giving men a number of supporting signals.

How should we account for the potential causes of such divergent tendencies involving cognitively salient variables? Communication accommodation theory typically interprets divergence of this sort as a linguistic effort to emphasize intergroup distinctiveness by people in search of their group's social identity (Giles & Coupland, 1991; Giles & Powesland, 1975). It further claims that communicative divergence (often along with psychological convergence) is likely to take place in role-discrepant situations where participants share a complementary relationship (Thakerar, Giles, & Cheshire, 1982). In such asymmetrical social relationships, it is likely that for the sake of certainty in their communication transactions the two groups of participants involved tend to diverge stylistically from the outgroup as a result of emphasizing prototypical linguistic behaviors of the group with which the speaker identifies himself or herself (Giles & Coupland, 1991:83).

Thus, the two examples of divergence in the Japanese context may be interpreted as a typical consequence of outgroup referee design (Bell, 1984:188): speakers diverge from their ingroup speech towards a speech and identity not their own in unmarked ways but prestigious ways. The Japanese college students studied in Abe (1989) may diverge in mixed-sex interactions as a linguistic reflection of traditional, stereotyped gender-role ideologies: maintaining hierarchical relations, Japanese men take charge of a culturally prescribed, superordinate role of the principal agent in soto 'outside' contexts, whereas Japanese women are expected to remain with a subordinate or modest role in uchi 'inside' contexts (Rosenberger, 1994). Similarly, the divergent shifts in predicate style in the additional analysis presented here may be derived from speakers' culturally and even institutionally prescribed, prototypical self-images of polite, deferential women (Mashimo, 1969).²³ It is significant that (as compared with particle ellipsis) these relatively more conscious, initiative shifts, which involve a redefinition of the relationship between speaker and addressee initiated by the speaker (Bell, 1984: 184-185), are revealed more clearly in cross-sex, cross-subcultural

	Individual Factors	% -wa/-ga Elided	Probability	Significance
Factor group 2	Yes	41 (13/32)	.60	
NP dislocation and	No	23 (159/681)	.51	
predicate ellipsis	Predicate ellipsis	14 (5/35)	.23	p < .05
Factor group 3	Ν	33 (34/103)	.64	
Immediately preceding	e	30 (44/148)	.55	
sound	u	24 (22/93)	.55	
	a	28 (19/68)	.55	
	0	20 (37/187)	.47	
	i	14 (21/149)	.36	p < .05
Factor group 4	Interrogative	46 (45/97)	.76	
Speech act categories	Mocking	50 (2/4)	.69	
	Emphatic	34 (23/68)	.66	
	Inferential	26 (5/19)	.62	
	Informative	18 (102/560)	.42	p < .05
Factor group 7	Mixed-sex	28 (146/520)	.58	
Gender composition	Single-sex	14 (31/228)	.32	p < .05
Input probability: .209 Chi-square/cell: .8855				
Mean percentage: 24 (17 $N = 748$	7/748)			

TABLE 8. Male-specific constraints on particle ellipsis

interactions in which the speaker's gender-linked identity and group membership are likely to be questioned or even threatened by the outgroup rather than in single-sex ingroup interactions.

Further research on Japanese gender differentiation should take advantage of the cognitive distinction concerning apparently gender-linked variables. Researchers should note that cognitively salient variables are more likely to respond more actively to the linguistic construction of gender-linked identity than are variables of less cognitive salience, and that social psychological processes tend to become most evident in subcultural contact such as mixed-sex interactions, which are therefore a promising site for elucidating the dynamics of linguistic gender differentiation.

Men versus women. In the following discussion, I focus on patterns of variation in particle ellipsis that are unique to the two gender groups. I conducted another GOLDVARB analysis of tokens, grouping them separately according to the speaker's gender. I discuss my findings in reference to those of Shibamoto (1990), which is the most comprehensive study done so far but does not adopt multivariate analysis.

As a matter of course, factor group 6 (speaker's gender) was eliminated from the GOLDVARB runs. Therefore, a total of seven factor groups entered the GOLD-VARB analyses. Tables 8 and 9 include only the results of factor groups found to be statistically significant by regression analysis. The female group has a mean

	Individual Factors	% -wa/-ga Elided	Probability	Significance
Factor group 2	Yes	54 (19/35)	.72	
NP dislocation and	No	28 (135/488)	.51	
predicate ellipsis	Predicate ellipsis	14 (6/42)	.26	p < .01
Factor group 4	Emphatic	40 (24/60)	.63	
Speech act categories	Interrogative	35 (41/117)	.63	
	Inferential	27 (3/11)	.48	
	Informative	24 (92/377)	.44	p < .01
Factor group 5	Unused	41 (40/97)	.64	
Information status	Evoked	34 (61/179)	.57	
	Brand-new	20 (59/289)	.41	p < .01
Factor group 7	Single-sex	35 (47/136)	.58	
Gender composition	Mixed-sex	26 (113/429)	.46	p < .01
Input probability: .265 Chi-square/cell: .8277 Mean percentage: 28 (1) N = 565	60/565)			

TABLE 9. Female-specific constraints on particle ellipsis

ellipsis rate of 28% (160/565).²⁴ The male group has a mean ellipsis rate of 24% (177/748). The chi-square per cell values are low enough for both groups to indicate reliable results: .8855 for males and .8277 for females. The levels of significance (*p* levels) for the selected factors are less than .05 for males and less than .01 for females.

Factor group 2 (NP dislocation and predicate ellipsis) is shared by the sexes and shows the same relative ranking of factor weights as in the overall analysis presented earlier (Table 2). The only difference between the sexes is the much higher promoting effect of NP dislocation in women's ellipsis (.72 vs. men's .60). As I argued earlier, this discrepancy may have implications for the contradictory results from past studies with respect to the correlation between NP dislocation and particle ellipsis in Japanese. I made a case for the necessity of taking into account gender-linked specificity in the effects of this variable. Shibamoto (1990) claimed that canonical word order in Japanese inhibits particle ellipsis by women. The claim, however, must be refuted, given that canonical word order has an almost neutral effect on ellipsis by women (.51).

Factor group 4 (speech act categories) is also shared by the sexes and displays tendencies that are fairly consistent with the overall analysis. Here again, the interrogative and emphatic utterances are ranked as strong promoting factors, although the two types are not clearly differentiated by women (i.e., both types are given .63). There is one specific discrepancy to note in the results. In particle ellipsis by men, mocking mood utterances are associated with a much higher value (.69) than in the overall analysis (.53), which I attribute to the extremely small number of tokens (N = 4) for this factor. Shibamoto (1990) found that the

use of sentence-final particles, which allows the speaker to deliver a certain pragmatic intention to the addressee in Japanese, has no effect on particle ellipsis by men but strongly promotes ellipsis by women. In the present analysis, however, a speaker's speech act is found to be a robust factor promoting particle ellipsis, regardless of the speaker's gender.²⁵

Factor group 7 (gender composition) is also found to be significant for both groups. As is obvious from the preceding discussion, single-sex interactions tend to favor ellipsis in women (.58) but to disfavor it highly in men (.32). Conversely, mixed-sex interactions tend to disfavor ellipsis in women (.46) but to favor it in men (.58). I argued that these tendencies result from mutual convergence of intra-subcultural norms in particle ellipsis taking place in cross-subcultural contact.

My results also sort out factor groups with significant gender-specific effects on particle ellipsis. Factor group 3 (immediately preceding sounds) is found to have effects exclusively for male speakers and factor group 5 (information status) to have effects only for female speakers.

In the phonological conditioning, men tend to elide particles most frequently after syllabic nasal (.64). This pattern clearly reflects the universal phonological process of consonant cluster reduction for articulatory ease, which has been recognized as one of the most powerful linguistic constraints on phonological simplification in a number of variation studies (e.g., Guy, 1980).²⁶ The high front vowel /i/, on the other hand, is strongly correlated with retention of the particles (.36). This tendency may be due to the degree of articulatory distance (or dissimilarity) between /i/ and the following consonants /w/ and /g/. The fact that the three other vowels, which are either non-high or non-front, uniformly slightly favor ellipsis (.55) is consistent with this reasoning.

Factor group 5 (information status) is found to be significant only for female speakers. The results display the same general tendencies found in the overall analysis (Table 2). Particle ellipsis by women is favored with NPs which represent unused information (.64) and evoked information (.57), but it is disfavored with NPs conveying brand-new information (.41). Shibamoto's (1990) claim holds true that NPs that are psychologically close and highly perceptible to speakers promote particle ellipsis by women. However, the present analysis clearly disagrees with her claim that NPs representing information close and perceptible to speakers hamper particle ellipsis by men.

The overall picture of gender-linked differentiation in the hierarchy of constraints on Japanese particle ellipsis summarized in Table 10 makes it difficult to accept Shibamoto's (1990) generalization that structural features (i.e., "features whose presence or absence is empirically observable, whether it be at the phonological, morphosyntactic, or discourse setting level" [p. 103]) tend to play a dominant role in particle ellipsis by men but a minimal role in particle ellipsis by women. Table 10 clearly shows that Shibamoto's claim oversimplifies the complexity of the facts, given that structural features are consistently ranked as strong constraints, regardless of the speaker's gender. Specifically, both gender groups share speech act categories (factor group 4) and NP dislocation and predicate ellipsis (factor group 2) as highly influential factors, both positively and negatively.

	Men		Women	
	Factor	Strength	Factor	Strength
Promoting factors	Interrogative speech act	.76	NP dislocation	.72
-	Mocking speech act	.69	Unused information	.64
	Emphatic speech act	.66	Emphatic speech act	.63
	Syllabic nasal	.64	Interrogative speech act	.63
	Inferential speech act	.62	0	
	NP dislocation	.60		
	Mixed-sex interaction	.58	Single-sex interaction	.58
	Vowels /e/, /u/, /a/	.55	Evoked information	.57
	Canonical word order	.51	Canonical word order	.51
Inhibiting factors	Predicate ellipsis	.23	Predicate ellipsis	.26
_	Single-sex interaction	.32		
	Vowel /i/	.36		
	Informative speech act	.42	Brand-new information	.41
	Vowel /o/	.47	Informative speech act	.46
			Mixed-sex interaction	.46
			Inferential speech act	.48
			-	

TABLE 10. Hierarchy of constraints on particle ellipsis: Men versus women

Notes: Factors are in decreasing order of strength. Factors in boldface are gender-exclusive.

Shibamoto (1990) maintained that particle ellipsis by women is highly sensitive to functional/interpretive features (i.e., the features "whose presence or absence depends on analysis of the speaker's psychological state with regard to his or her utterance" [p. 103]), whereas particle ellipsis by men tends not to be. She argued for gender-linked differentiation on a metalinguistic level: men are primarily concerned with linear structural entities in analyzing the utterance, whereas women look into the utterance in relation to the "particular context of speech (setting, participant, discourse, etc.)" as well as a variety of related other linguistic entities (Shibamoto, 1990:99–100). Although factor group 5 (information status) has been found to be significant only for the female group, Shibamoto's general claim must again be regarded as an overgeneralization. Our results clearly indicate that particle ellipsis by men likewise shifts to a statistically significant extent in response to changes in the types of gender composition (factor group 7) (Table 8).

I pointed out earlier that prior investigation of Japanese gender differentiation involves several methodological problems. The results of past studies are derived from impressionistic comparisons of bare percentages without conducting any statistical investigation. More critically, the studies do not take into account interfactor relationships (i.e., relative strength) among the independent variables which simultaneously affect particle ellipsis. These problems have led researchers to dig out only the factors unique to each of the gender groups, neglecting the universal that linguistic factors (structural factors in Shibamoto's [1990] terms) equally permeate the two gender groups as primary constraints on particle ellipsis over other types of factors. Moreover, prior investigation is based only on data from single-sex interactions. The characterization of gender distinctions in Japanese particle ellipsis has thus been too restricted to represent a holistic picture including the dynamic properties of gender-related variation sensitive to different participant frameworks.

CONCLUSION

The significance of this study is twofold. Although its findings should be taken as preliminary and require further future confirmation with a more carefully drawn corpus, it yields some useful insights into the proper methods to adopt in the quantitative sociolinguistic investigation of Japanese. I demonstrated that the neglect of interfactor relationships and the lack of statistical verification of quantitative differences in analyzing variation have led to the oversimplification of complex gender-related linguistic behavior. By fulfilling the methodological requirements in quantification of speech data, this study shows that a variety of constraints on Japanese particle ellipsis are hierarchically ordered and largely conform to the universal hierarchies of constraints on linguistic variation: linguistic factors tend to outweigh other types of constraints, regardless of the speaker's gender. Moreover, the present analysis reveals that rather mechanistic surface structure constraints are likely to produce even stronger effects than functional considerations, which have been the exclusive focus of most past work on particle ellipsis in Japanese.

Second, this study also clarifies the inadequacy of the categorical treatment of the social variable of gender in the traditional quantitative sociolinguistic paradigm by presenting some preliminary evidence for its dynamic properties: the active interplay between the speaker's gender and different types of participant framework (i.e., gender composition). Shibamoto's (1985, 1990) subculture approach, which defined gender differentiation exclusively within subcultures, has proven too restricted to provide a complete picture of the complexity in gender-related linguistic behavior, especially of the dynamic nature of involving intragender variability activated in contact situations of the subcultures. The necessity of this dynamic approach to intricate relationships between gender and linguistic variation is confirmed in light of a violation of the universal axioms. Although stylistic or intraspeaker variability in general has been critically overlooked in the quantitative sociolinguistic paradigm so far, the integration of intraspeaker variability into the paradigm is vital and would result in a more adequate sociolinguistic theory (Rickford & McNair-Knox, 1994).

NOTES

1. In the present study, I collapsed the ellipsis of -ga and -wa mainly for comparative purposes. In addition, the distinction between the two is not always clearcut, and there are often conflicting views on which particle has been elided. Hinds (1982:158), for example, claimed that "it is almost impos-

sible to determine with any certainty whether a missing subject particle should be reconstructed as wa or ga."

2. One of the *LVC* reviewers expressed dissatisfaction with my fundamental choice of -wa/-ga alone, commenting that a unified analysis of Japanese particle ellipsis cannot be achieved unless we also take into account the other canonical particles (-o and -mo). Although I appreciate the importance of the issue raised, I leave it for future research.

3. Shibamoto's (1987) study is not directly relevant to the present study since she considered the effects of age and formality of situation only on women's deletion of subject, direct object, and indirect object case particles. The present study investigates particle ellipsis in the most casual style of speech and compares patterns of variability between men and women of the same generation.

4. But interfactor relationships (i.e., which factor has a stronger or weaker effect on the dependent variable than which other factor) are not taken into account.

5. Structural, according to Shibamoto (1990:103), "refers to features whose presence or absence is empirically observable, whether it be at the phonological, morphosyntactic, or discourse setting level," whereas functional/interpretive includes "those whose presence to absence depends on analysis of the speaker's psychological state with regard to his or her utterance."

- 6. This factor is also included in the functional/interpretive features by Shibamoto (1990:94).
- 7. The following are example sentences from Tsutsui (1983:208).
- (i) a. Iroirona hito ga paatii ni kite-mashita yo.
 various people party to came were there SFP
 'Various people came to the party.'
 - b. Paatii ni wa iroirona hito (ga) kite-mashita yo.

TOP

According to Tsutsui, the nominative particle, -ga, is more likely to be elided in (i.b) because the sentence satisfies the last NP condition.

8. Shibamoto (1990:88–89) regarded her sample (117 tokens for men, 85 for women) as too small to provide the basis for a reliable statistical analysis.

9. It strikes me as odd that only men would include particles more with NPs, which carry information close to the speaker and hearer. Shibamoto (1990:96) herself seemed to express the same sentiment: "[I] tis not entirely clear what interpretation to place on this latter fact (i.e., negative effects of 'closeness of information' on particle ellipsis by men), except that this feature is not one to which male speakers attend when choosing to ellipt."

10. There are two general approaches to gender differentiation in language (Coates, 1988). One is the so-called subculture approach. It contends that men and women belong to two distinct so-ciolinguistic subcultures in which the two sexes independently acquire a different patterning of communicative skills. Cross-sex interactions are inherently cross-cultural communication, and mis-communication between men and women shares the fundamental nature of cross-cultural miscommunication (Maltz & Borker, 1982). The other approach is called the power/dominance approach. It interprets gender differentiation as a reflection of inequality between the sexes in society, claiming that women's language echoes their inferior/powerless status in society. The power which society grants to men underlies male dominance in conversation (Lakoff, 1975; Rosaldo, 1974).

11. I took advantage of two kinds of corpora when I began to conduct this preliminary investigation as a graduate student at the University of Arizona. The first corpus is based on one of the occasional parties organized by a friend of mine where only Japanese students usually showed up. About a year prior to this research project, I decided to tape-record it for potential future use. The second corpus came from a stock of conversational tapes that had originally been submitted as a class assignment at the University of Arizona Department of East Asian Studies and had received the participants' permission for public use. What audio equipment was used to record these corpora is thus unknown. All the subjects whose speech was analyzed had stayed in the United States for less than five years. I did not find anything unnatural in their Japanese that might have been caused by their extensive exposure to an English-speaking environment.

12. A portable stereo cassette recorder, Sony WM-D3, was used at this party.

13. My speech was not included in this study.

14. "Self-recorded" means that one of the participants operated the tape recorder. All the self-recorded conversations analyzed were originally taped as a class assignment, and none of the participants were aware that their uses of the particles would be investigated.

15. A reviewer regarded it as quite inconceivable to identify such a friendly, egalitarian relationship between a younger woman and a male colleague 13 years older on the grounds that seniority is so

important in constructing human relations in Japanese culture. I would maintain that it is plausible that people living in a foreign culture generally feel somewhat liberated or revived in a brand-new environment, and that the effects of their native cultural norms on their behaviors tend to be greatly diminished through the processes of acculturation. In addition, the two subjects, who used to be colleagues, now share similar life experiences and problems in adjusting to the new culture. Thus, I regarded the likelihood of their age difference having an effect on their vernacular production as minimal.

16. Prince (1992) proposed a category for inferable information (i.e., an NP evoking entities which were not previously mentioned in the conversation and which the hearer had no prior knowledge of, but whose existence he or she could infer on the basis of some entity that was previously evoked and some belief he or she has about such entities). I collapsed this category with unused information.

17. Tamori himself stated: "more data is required to determine the deletability of such case markers [subject and direct object markers] after scrambling" (1977:260).

18. As far as percentages are concerned, female speakers in the single-sex interactions in the present study elided -wa/-ga more frequently (34%) than those in Shibamoto (1985) (23.9%) but almost as often as those in Shibamoto (1990) (35.7%). The percentages of ellipsis for male speakers in single-sex interactions are more consistent across the three studies: 11% in Shibamoto (1985), 11.1% in Shibamoto (1990), and 14% in the present study.

19. In addition to the speaker's gender, a regression analysis of each type of participant framework also included the four factor groups that were found to be significant in the earlier analyses (factor groups 1, 2, 4, 5).

20. Though Ide (1990) and many others (e.g., Ide et al., 1986) both generalized that Japanese women speak more politely than do men based primarily on introspective data, it seems more appropriate to interpret the claim in close linkage to the context of interactions. Empirical examination of polite language use in sociopsychologically heterogeneous communicative settings yields results that reveal only a slight lead by women (28.3% [119/421] vs. 24.1% [103/428] for men). Moreover, the generalization may not necessarily be confirmed once we look more closely at participant framework in the interaction: in the present study, men use distal style much more frequently in same-sex dyads than do women.

21. The gender-related patterns seen in these single-sex interactions counter the stereotypes of men's and women's language derived from studies in English-speaking cultures: men's conversational styles are typically associated with competitiveness or aggressiveness and women's styles with co-operativeness (Tannen, 1990). The patterns in Abe's study, however, show that in single-sex interactions both men and women seem to be oriented to co-operative strategies to the same degree, and that women seem to be slightly more aggressive in managing the floor (cf. Goodwin, 1980, 1990).

22. The remaining two types of strategies include (i) to disturb the smooth flow of conversation and (ii) to control the direction of conversation, introducing new topics.

23. This result may be related to systematic discrepancies in the native perceptions of situationally required degrees of politeness between men and women in Japanese society (Ide, 1990; Ide et al., 1986).

24. Five tokens considered as mocking categorically carried particles and were therefore eliminated from the GOLDVARB analysis.

25. 42.6% (561/1318) of all tokens and 56.1% (189/337) of the tokens with particles elided are accompanied by sentence-final particles.

26. When the particles *-wa* or *-ga* are not elided, the surface phonetic form of the syllabic nasal differs in each case. The realizations would be something like $[h\tilde{o}\tilde{w}wa]$ (from /hon wa/ 'book+TOP') and $[h\tilde{o}nga]$ (from /hon ga/ 'book-SUB') (Vance, 1987:35–37).

REFERENCES

- Abe, K. (1989). Sei yakuwari to hatsuwa no kinoo [Sex roles and pragmatic functions]. Eibei bungaku kenkyuu. Nihon Joshi Daigaku Eigo Eibungaku-kai. 75–93.
- Bayley, R., & Pease-Alvarez, L. (1997). Null pronoun variation in Mexican-descent children's narrative discourse. *Language Variation and Change* 9:349–371.

Bell, A. (1984). Language style as audience design. Language in Society 13:145-204.

Bilous, F. R., & Krauss, R. M. (1988). Dominance and accommodation in the conversational behaviours of same- and mixed-gender dyads. *Language and Communication* 8:183–194.

Bortoni-Ricardo, S. M. (1985). *The urbanization of rural dialect speakers: A sociolinguistic study in Brazil.* Cambridge: Cambridge University Press.

- Brouwer, D., Gerritsen, M., & de Haan, D. (1979). Speech differences between women and men: On the wrong track? *Language in Society* 8:33–50.
- Brown, P. (1980). How and why are women more polite: Some evidence from a Mayan community. In S. McConnell-Ginet et al. (Eds.), *Women and language in literature and society*. New York: Praeger. 111–149.
- Cameron, D., & Coates, J. (1988). Some problems in the sociolinguistic explanation of sex differences. In J. Coates & D. Cameron (Eds.), Women in their speech communities. London: Longman. 13–26.
- Coates, J. (1988). Introduction. In J. Coates & D. Cameron (Eds.), Women in their speech communities. London: Longman. 63–73.
- Coates, J., & Cameron, D. (Eds.). (1988). Women in their speech communities. London: Longman.
- Douglas-Cowie, E. (1978). Linguistic code-switching in a Northern Irish village: Social interaction and social ambition. In P. Trudgill (Ed.), *Sociolinguistic patterns in British English*. London: Arnold. 37–51.
- Eakins, B., & Eakins, G. (1976). Verbal turn-taking and exchanges in faculty dialogue. In B. L. Dubois & I. Crouch (Eds.), *The sociology of the languages of American women*. San Antonio, TX: Trinity University.
- Eckert, Penelope. (1988). Adolescent social structure and the spread of linguistic change. Language in Society 17:183–207.
- (1989). The whole women: Sex and gender differences in variation. *Language Variation and Change* 1:245–267.
- Eckert, P., & McConnell-Ginet, S. (1992). Think practically and look locally: Language and gender as community-based practice. *Annual Reviews of Anthropology* 21:461–490.
- Edelsky, C. (1981). Who's got the floor? Language in Society 10:383-421.
- Erman, B. (1992). Female and male usage of pragmatic expressions in same-sex and mixed-sex interaction. *Language Variation and Change* 4:217–234.
- Fishman, P. (1983). Interaction: The work women do. In B. Thorne, C. Kramarae, & N. Henley (Eds.), Language, gender and society. Rowley, MA: Newbury House. 89–101.
- Fujii, N., & Ono, T. (1994). The occurrence and non-occurrence of the Japanese direct object marker o in conversation. Unpublished manuscript, University of Oregon and University of California, Santa Barbara.
- Giles, H. (1980). Accommodation theory: Some new directions. York Papers in Linguistics 9:105– 135.
- Giles, H., & Powesland, P. F. (1975). Speech style and social evaluation. London: Academic.
- Giles, H., & Coupland, N. (1991). Language: Contexts and consequences. Pacific Gove, CA: Brooks/ Cole.
- Goodwin, M. H. (1980). Directive-response speech sequences in girls' and boys' task activities. In S. McConnell-Ginet et al. (Eds.), Women and language in literature and society. New York: Praeger. 157–173.
- _____ (1990). *He-said-she-said: Talk as social organization among Black children*. Bloomington: Indiana University Press.
- Graddol, D., & Swann, J. (1989). Gender voices. Oxford: Blackwell.
- Guy, G. R. (1980). Variation in the group and the individual: The case of final stop deletion. In W. Labov (Ed.), *Locating language in time and space*. New York: Academic. 1–36.
 - (1990). The development of a morphological class. *Language Variation and Change* 2:1–18.
- (1991). Contextual conditioning in variable lexical phonology. *Language Variation and Change* 3:223–239.
- Hasegawa, Y. (1993). Hanasi-kotoba ni okeru "mu-kansi" no kinoo [Functions of particle deletion in spoken Japanese]. Nihongo Kyooiku 80:158–168.
- Hinds, J. (1976). Aspects of Japanese discourse structure. Tokyo: Kaitakusha.
- _____ (1982). Ellipsis in Japanese. Edmonton: Linguistic Research.
- Ide, S. (1990). How and why do women speak more politely in Japanese? In S. Ide & N. H. McGloin (Eds.), *Aspects of Japanese women's language*. Tokyo: Kurosio. 63–79.
- Ide, S., Hori, M., Kawasaki, A., Ikuta, S., & Haga, H. (1986). Sex differences and politeness in Japanese. *International Journal of the Sociology of Language* 58:25–36.
- Jorden, E. H., & Noda, M. (1987). Japanese: The spoken language, Part I. New Haven: Yale University Press.
- Kiparsky, P. (1972). Explanation in phonology. In S. Peters (Ed.), Goals of linguistic theory. Englewood Cliffs, NJ: Prentice-Hall.

Kuno, S. (1972). Functional sentence perspective: A case study from Japanese and English. *Linguistic Inquiry* 3:269–320.

_____ (1973). The structure of the Japanese language. Cambridge, MA: MIT Press.

Labov, W. (1966). *The social stratification of English in New York City*. Washington, DC: Center for Applied Linguistics.

(1969). Contraction, deletion, and inherent variability of the English copula. *Language* 45:715–762.

(1972a). Sociolinguistic patterns. Philadelphia: University of Pennsylvania Press.

(1972b). Some principles of linguistic methodology. Language in Society 1: 97–120.

- (1981). Field methods of the project on linguistic change and variation. (Sociolinguistic Working Papers 81.) Austin, TX: Southwest Educational Development Lab.
- Lakoff, R. (1975). Language and women's place. New York: Harper & Row.
- Le Page, R. B., & Tabouret-Keller, A. (1985). Acts of identity: Creole-based approaches to language and ethnicity. Cambridge: Cambridge University Press.
- Maltz, D. N., & Borker, R. A. (1982). A cultural approach to male-female communication. In J. J. Gumperz (Ed.), Language and social identity. Cambridge: Cambridge University Press. 196–216.

Martin, S. (1975). A reference grammar of Japanese. New Haven, CT: Yale University Press.

- Mashimo, S. (1969). Hujingo no kenkyuu [A study of women's language]. Tokyo: Tookyoo-doo.
- Masunaga, K. (1988). Case deletion and discourse context. In W. J. Poser (Ed.), Papers from the Second International Workshop on Japanese Syntax. Stanford, CA: CSLI.
- Matsuda, K. (1992). Accusative case marker -o deletion in Tokyo Japanese. In C. P. Canakis, G. P. Chan, & J. M. Denton (Eds.), Proceedings of the 28th Regional Meeting of the Chicago Linguistic Society (Vol. 1). 356–366.

Maynard, S. K. (1981). The given/new distinction and the analysis of the Japanese particles -wa and -ga. *Papers in Linguistics* 14:132–147.

- McConnell-Ginet, S. (1988). Language and gender. In F. J. Newmeyer (Ed.), *Linguistics: The Cambridge survey. Volume IV: Language: The socio-cultural context*. Cambridge: Cambridge University Press. 75–99.
- McGloin, N. H. (1986). Feminine wa and no: Why do women use them? Journal of the Association of Teachers of Japanese 20:7–27.

(1990). Sex difference and sentence-final particles. In S. Ide & N. H. McGloin (Eds.), Aspects of Japanese women's language. Tokyo: Kurosio. 23–41.

- (1993). Shuu-joshi [Final particles]. Nihongo-gaku 12:120–124.
- Milroy, L. (1980). Language and social network. Cambridge, MA: Blackwell.
- Mulac, A., Wiemann, J. M., Widenmann, S., & Gibson, T. W. (1988). Male/female language differences and effects in same-sex and mixed-sex dyads: The gender-linked language effect. *Commu*nication Monographs 55:315–335.

Myhill, J. (1992). Typological discourse analysis: Quantitative approaches to the study of linguistic function. Cambridge, MA: Blackwell.

Nichols, P. C. (1980). Women in their speech communities. In S. McConnell-Ginet et al. (Eds.), Women and language in literature and society. New York: Praeger. 140–149.

(1983). Linguistic options and choices for Black women in the rural South. In B. Thorne et al. (Eds.), *Language, gender, and society*. Rowley, MA: Newbury House. 54–68.

(1984). Networks and hierarchies: Language and social stratification. In C. Kramarae et al. (Eds.), *Language and power*. Beverly Hills, CA: Sage. 23–42.

Peng, F. C. C., Hori, M., Horiguchi, J., Ide, S., Takahara, O., & Tanaka, M. (1981). Male/female differences in Japanese. Tokyo: The East-West Sign Language Association.

Philips, Susan U. (1980). Sex differences and language. Annual Reviews of Anthropology 9:523-544.

Poplack, S. (1980a). Deletion and disambiguation in Puerto Rican Spanish. *Language* 56:371–385. _____ (1980b). The notion of the plural in Puerto Rican Spanish: Competing constraints on (s)

deletion. In W. Labov (Ed.), *Locating language in time and space*. New York: Academic. 55–67. Preston, D. (1989). *Sociolinguistics and second language acquisition*. New York: Blackwell.

(1991). Sorting out the variables in sociolinguistic theory. American Speech 66:33-56.

Prince, E. (1987). Sara Gorby, Yiddish folksinger: A case study of dialect shift. International Journal of the Sociology of Language 67:83–116.

(1992). The ZPG letter: Subjects, definiteness, and information status. In W. C. Mann & S. A. Thompson (Eds.), *Discourse description: Diverse linguistic analyses of a fund-raising text.* Philadelphia, PA: Benjamins. 295–325.

Rand, D., & Sankoff, D. (1990). GoldVarb Version 2: A variable rule application for the Macintosh. Montreal: Université de Montréal.

- Rickford, J., & McNair-Knox, F. (1994). Addressee- and topic-influenced style shift: A quantitative sociolinguistic study. In D. Biber & E. Finegan (Eds.), *Sociolinguistic perspectives on register*. Oxford: Oxford University Press. 235–276.
- Rosaldo, M. (1974). Women, culture and society: A theoretical overview. In M. Rosaldo & L. Lamphere (Eds.), *Women, culture and society*. Stanford, CA: Stanford University Press. 1–16.
- Rosenberger, N. R. (1994). Indexing hierarchy through Japanese gender relations. In J. M. Bachnik & C. J. Quinn, Jr. (Eds.), *Situated meaning: Inside and outside in Japanese self, society, and language.* Princeton, NJ: Princeton University Press. 88–112.
- Sankoff, D. (1985). Statistics in linguistics. In Encyclopedia of statistical sciences (vol. 5). New York: Wiley. 74–81.
- (1986). Variable rules. In U. Ammon et al. (Eds.), *Sociolinguistics: An international handbook of the science of language and society*. Berlin & New York: de Gruyter.
- (1988). Sociolinguistics and syntactic variation. In F. J. Newmeyer (Ed.), *Linguistics: The Cambridge survey. Volume IV: The socio-cultural context.* Cambridge: Cambridge University Press. 140–161.
- Sankoff, D., & Labov, W. (1979). On the uses of variable rules. Language in Society 8:189-222.

Shibamoto, J. S. (1985). Japanese women's language. New York: Academic.

- (1987). The womanly woman: manipulation of stereotypical and nonstereotypical features of Japanese female speech. In S. U. Philips, S. Steele, & C. Tanz (Eds.), *Language, gender and sex in comparative perspective*. Cambridge: Cambridge University Press.
- (1990). Sex-related variation in the ellipsis of wa and ga. In S. Ide & N. H. McGloin (Eds.), Aspects of Japanese women's language. Tokyo: Kurosio. 81–104.
- Shibatani, M. (1990). The languages of Japan. Cambridge: Cambridge University Press.
- Sukle, R. J. (1994). Uchi/soto: Choices in directive speech acts in Japanese. In J. M. Bachnik & C. J. Quinn, Jr. (Eds.), Situated meaning: Inside and outside in Japanese self, society, and language. Princeton, NJ, Princeton University Press. 113–142.
- Swann, J. (1988). Talk control: an illustration from the classroom of problems in analyzing male dominance of conversation. In J. Coates & D. Cameron (Eds.), Women in their speech communities. London: Longman. 123–140.
- Tamori, I. (1977). NP and particle deletion in Japanese discourse. University of Southern California Occasional Papers in Linguistics 5:243–263.
- Tannen, D. (1990). You just don't understand: Women and men in conversation. New York: Morrow.
- Thakerar, J. N., Giles, H., & Cheshire, J. (1982). Psychological and linguistic parameters of speech accommodation theory. In C. Fraser & K. R. Scherer (Eds.), Advances in the social psychology of language. Cambridge: Cambridge University Press.
- Thomas, B. (1988). Differences of sex and sects: Linguistic variation and social networks in a Welsh mining village. In J. Coates & D. Cameron (Eds.), Women in their speech communities. London: Longman. 51–60.
- Tsutsui, M. (1981). Ellipsis of wa in Japanese. In S. Makino (Ed.), *Papers from the Middlebury* Symposium on Japanese Discourse Analysis. Tokyo: The Toyota Foundation.
 - (1983). Ellipsis of ga. Papers in Japanese Linguistics 9:199–244.
 - (1984). Particle ellipsis in Japanese. Doctoral dissertation, University of Illinois.
- Uchida, A. (1992). When "difference" is "dominance": A critique of the "anti-power-based" cultural approach to sex differences. *Language in Society* 21:547–568.
- Vance, T. (1987). An introduction to Japanese phonology. Albany: State University of New York Press.
- Walters, K. (1989). The interviewer as variable in quantitative sociolinguistic studies. Paper presented at the annual meeting of the Linguistic Society of America, Washington, DC.
- Watanabe, Y. (1986). Two kinds of ellipsis in Japanese discourse: A quantitative text study. Studies in Language 10:337–351.
- Weiner, E. J., & Labov, W. (1983). Constraints on the agentless passive. *Journal of Linguistics* 19:29–58.
- Wetzel, P. J. (1988). Japanese social deixis and discourse phenomena. *Journal of the Association of Teachers of Japanese* 22:7–27.
 - (1994). A movable self: The linguistic indexing of *uchi* and *soto*. In J. M. Bachnik & C. J. Quinn, Jr. (Eds.), *Situated meaning: Inside and outside in Japanese self, society, and language*. Princeton, NJ: Princeton University Press. 73–87.

- Yaeger-Dror, M. (1988). The influence of changing group vitality on convergence toward a dominant norm. *Language and Communication* 8:285–305.
- _____ (1993). Linguistic analysis of dialect "correction" and its interaction with cognitive salience. Language Variation and Change 5:189–224.
- Yamashita, H. (1979). Nihon no kotoba to kokoro [The Japanese Language and Mind]. Tokyo: Kodansha.
- Zimmerman, D. H., & West, C. (1975). Sex roles, interruptions and silences in conversations. In B. Thorne & N. Henley (Eds.), *Language and sex: Difference and dominance*. Rowley, MA: Newbury House. 105–129.