Gender, Sexuality, and Meaning

Linguistic Practice and Politics

Sally McConnell-Ginet

OXFORD
UNIVERSITY PRESS
2011

6

Intonation in a man's world

0. Introduction

> If one were to examine the literature on men's and women's speech, one would conclude that it was a rare phenomenon, found mostly among extinct American Indian tribes. It has been reported mostly by linguists who were also anthropologists, for cases in which the grammar or phonology of the language could be stated only by taking it into account. Working out from ordinary linguistics then, one would have to conclude that in most societies men and women talk alike. That is a strange conclusion to arrive at, if language is a social instrument, given the importance of role differentiation along sexual lines in most times and places and it is a false conclusion of course. (Hymes 1971, 69)

When Dell Hymes made these comments, the literature on women's and men's way of speaking could probably have been read in a fortnight. Since that time, there has been an explosion in the study of sex-differentiated linguistic behavior, and few people interested in language use any longer assume that women and men "talk alike" in most societies. We are still, however, at a very early stage in our understanding of how women and men speak, why they speak as they do, and the importance of language use for women in 'a man's world'. We have only recently begun to realize that social constraints on speech behavior may restrict women's and men's options and that such constraints function in the control of women. Recent investigations in this area are largely the product of feminist scholars' concern to understand how talk works to create and maintain sex stereotyping and male dominance.[1] Our speech not only reflects our place in culture and society but also helps to create that place.

"Ordinary linguistics," as Hymes calls it, provides theories and descriptions of structured language systems—for example, an account of the

This is a revised version of a paper that appeared in *Signs: Journal of Women in Culture and Society* 3 (Spring 1978): 541–559. I want to thank Cheris Kramarae and Barrie Thorne for their helpful suggestions on this version, which was published in Barrie Thorne, Cheris Kramarae, and Nancy Henley, eds., *Language, gender and society* (Rowley, MA: Newbury House, 1983), 69–88. The *Signs* paper developed from a talk I gave at the 1976 meetings of the American Anthropological Association.

regular syntactic relation between English declaratives ("Joan *ate* the spinach with gusto") and interrogatives ("*Did* Joan *eat* the spinach with gusto?") or of the processes involved in pronunciation of *want to* as *wanna*. Such general features of English are part of the system acquired by both women and men, although one sex might, for example, more frequently choose to use an interrogative form or a verbal contraction in certain contexts. If women always said *wanna* and men *want to*, we would speak of sex differences in a low-level phonetic rule for speech production, but if each sex understood the equivalence of the forms, the basic structural systems underlying women's and men's linguistic knowledge would be identical. What I call 'extraordinary' linguistics—the explicit and detailed characterization of the actual utterances of people situated in real social contexts—relies on standard linguistic accounts of the language systems in which those utterances are cast. In other words, we can't make much progress in describing socially significant differences in language use (the case of present interest to us being the interaction of language and sex) without a framework within which we can say explicitly what it is that 'differs'.[2]

Intonation—the tune to which we set the text of our talk—functions prominently in stereotypes of female and male speech in American English. In 'ordinary linguistics', intonational structures are far less well understood than, for example, syntactic structures.[a] This is connected to the fact that members of the speech community have a less well-developed and clearly articulated conscious awareness of tunes than of texts. Our writing system, for example, ignores intonation. (A small caveat is in order: punctuation and italics are sometimes rough indicators of intonational features.) We also don't find parents 'correcting' children's intonational patterns as they sometimes do syntax or word choices. This somewhat peripheral status of intonation in the linguistic system may help to explain why speech melodies seem to be sex-typed. Over and above literal message content, tunes and their variations do apparently convey (cultural) values of femininity and masculinity as well as other traits that are culturally linked to gender (emotionality, for example).

Although not all aspects of how speech melodies are performed are relevant to describing the structured language systems, some certainly are. What we do know about the linguistic structure of intonation in American English also makes plausible the hypothesis that the basic intonational system might be used differently by women and men. Analysts agree that intonational patterns in American English are frequently used to convey 'illocutionary force'—whether, for example, the speaker is framing an

a. There has been significant progress made in intonational phonology since this paper was written. See Ladd (2008) for thorough discussion, including an account of Janet Pierrehumbert's influential notational system, which was first proposed in Pierrehumbert (1980). The analysis of intonational structure is still not a topic in introductory linguistics texts, however.

utterance as a question or as an assertion—and certain other aspects of the speaker's 'attitude'. Thus, intonational choices will be among the primary indicators of a speaker's aims and of the speech strategies used to pursue those aims. Given a sociocultural system in which women and men are in different social networks and positions and in which their behavior is differently evaluated, we might predict that intonational usage would be an important constituent of sex-differentiated 'styles' of speaking.[3] This applies whether such styles are normative ideals, disparaged stereotypes, or attested actualities. Many actual sex differences in favored strategies of language use in particular contexts are due to male dominance of women; they often represent women's attempts to cope with social restrictions. Women's lives consist of more than their relations to men, however, and thus women's ways of talking will be influenced by factors unconnected to male dominance.[b] Intonational studies help shed light on the complex interaction of language and women's experience.

A single speech melody can be performed as part of a number of quite different strategies, and thus its occurrence is not definitive evidence of any particular strategic orientation. Similarly, there can be many different reasons for performing a particular melody in a certain way, for selecting one 'variant' rather than another. A major thesis of this essay is that most discussions of intonational usages have assumed an androcentric perspective. The significance attributed to women's tunes has typically failed to take into account the complex range of possibilities that emerge when women's experiences and their viewpoints are seriously considered.

This androcentric perspective is manifest in two distinct but related ways. First, male-created stereotypes of what women are like are relied on both to shape beliefs about what tunes occur and to interpret and evaluate the tunes that are actually heard. Second, frameworks for analyzing the significance of particular speech melodies do not take account of women's distinctive experiences; in particular, there is a tendency to assume that men's behavior is paradigmatic of human behavior. On the one hand, women are seen as fundamentally unlike men—'feminine' speech melodies are heard as signaling women's instability (often, incompetence) and as symbolic of their devalued 'naturalness'. On the other hand, such interpretations rest on the untenable assumption that women's and men's life histories are identical, that there are no differences in the ways they have come to speak as they habitually do and have come to adopt the strategies they typically employ.

Women's speech is discounted in a man's world primarily on the basis of *how* it is said—the tunes used (and other features of 'style'). The substance of female texts—*what* is said—is frequently ignored or (mis)interpreted in

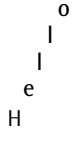
b. And, of course, women's relations to men are far more complex than 'male dominance' conveys.

light of hearers' assessments of the significance of the forms in which those texts are delivered. The problem, of course, is not in the melodies or their performers but in the interpreters. The following section reviews both empirical research and anecdotal suggestions about how the sexes 'sound' and, in particular, how both women and men use and interpret intonational patterns. The final section sketches a framework for explaining these observations and for further refining and testing specific hypotheses about the interaction of intonation and speaker/hearer gender.

1. Intonation: "It's not what she says but how she says it"

Many distinct phenomena are included under everyday uses of the term 'intonation' (often equated, in nontechnical discussions, with 'tone of voice'). Intonation does not characterize segments of sound but is perceived as a rhythmic structure 'overlaid' on a complete utterance. The main perceptual cues are pitch and volume changes over the course of an utterance. The language system does not recognize absolute values of pitch, volume, and duration but rather a number of abstract relational patterns, each of which can be 'realized' in different registers, in different volumes, and at different rates. These VARIANTS—alternative ways of performing basic intonational contours—play a role (only partly conventionalized) in communication. What variant is used may tell us, for example, where the speaker is from, or whether she just woke up, or whether he is lecturing to a class or talking to a friend, or how interested in the conversation the speaker wishes to appear.

Sex differences in speech are basically of two kinds. The first is what I have just called *variation*: alternative ways of uttering the 'same' linguistic unit. For intonation, this amounts to different ways of playing a single tune. The English 'question intonation' ends with a pitch rise to a point higher than earlier pitch levels in the sentence. There are, however, many variations possible on this one basic pattern. We might investigate whether women tend to make this final pitch rise relatively larger than men (rising more tones) in certain contexts. When answering the phone, perhaps she says



whereas he says

These are different versions or VARIANTS of the general pattern often notated as "Hello ↑," a pattern some analysts call 'high rise' to indicate that it may occur on utterances that are not questions.

The second kind of sex difference that can be manifest in speech involves different SELECTION among the basic structural units—that is, different uses of the common system. By this I mean that women and men might tend to choose somewhat different strategies for speaking in roughly comparable situations. For example, a woman might more often than a man answer the phone with a "Hello ↑." He might, however, tend to prefer "Hello ↓" (the fall or 'neutral' intonation). These two intonational contours or tunes are quite distinct linguistically—they are *not* variations on a single melodic frame but different tunes altogether. To use one rather than the other is to engage in a different linguistic action; to act differently in roughly comparable situations is to pursue different strategies.

To put it slightly differently, we can think of the intonational system as including a 'dictionary' of meaningful tunes, an inventory of meaningful contours. Two people with the same internal dictionary can nonetheless have different patterns of usage. Where different pronunciations of a single intonational 'word' occur in different frequencies in the speech of two individuals, their usage reflects VARIATION-BASED differences. Where the frequency of occurrence of particular 'words' differs in some context, then the difference is SELECTION-BASED. Frequencies of '↑' compared to '↓' reflect selection; in contrast, the 'slope' of the rising (or falling) contour is subject to variation. (The distinction is by no means always easy to draw, but I confine attention to clear cases.)

Since any basic linguistic unit can be acquired by any speaker, all intonational (and other) differences in the speech of the sexes with a physiological explanation are variation-based. There are probably a few such differences. Adult men tend to be larger than adult women and thus their basic instrument for speech is pitched in a somewhat lower register. The larger vocal cords tend to vibrate more slowly, producing sounds that are lower in fundamental frequency (measured in units called hertz, abbreviated Hz) and thus heard as lower pitched. There is actually considerable overlap between the physiologically determined pitch ranges of adult female and male voices, but individuals seldom use in speech the full gamut of pitches they are capable of producing.

Still, although certain components of intonational differences between the sexes are a function of anatomical differences, it is clear that sociocultural factors also contribute significantly to establishing parameters of variation. Overt SPEECH STEREOTYPES of 'feminine' or 'masculine' speech (either believed typical of women and men, respectively, or desirable for them) rely most heavily on variants. This is probably because distinctions among variants do not alter overt referential meaning and are thus readily available as explicit signals of social meaning. What variants a speaker favors (within the range anatomical constraints permit) will depend on a number of factors: for example, which variants are most frequently heard

and under what situations, or which variants are favored by the people with whom one identifies.

Even dimensions of variation that are quite constrained by individual physical characteristics can be affected by social and cultural factors. For example, different cultures settle on different parts of the possible pitch range for actual use in speaking by each sex. The studies of H. T. Hollien and his colleagues suggest that the speaking pitches of American males are, on the average, lower than those of some of their European counterparts by more than differences in size would predict.[4] Devereux (1949) observes that the Mohave pay no attention to the male 'voice change' at the time of puberty and that men do not shift pitch when imitating women. In our own culture, however, high-pitched voices are devalued and labeled 'shrill' if they are loud. The fact that our speech melodies are sung in different registers, then, reflects not simply the biological fact of our different physical size but is also a product of our *learning* to sound like women and men, although we have relatively little information on exactly how this works.[5]

If average speaking pitch is an important cue to speaker sex, reflecting both biologically based differences and cultural stereotypes overlaid on that biological base, it is apparently *not* the primary cue for stereotyping speaker's gender. Sachs, Lieberman, and Erickson (1973), Sachs (1975), and Coleman (1976) show clearly that pitch is not crucial to the identification of speaker sex and that other vocal tract characteristics play an important role. Sachs and her colleagues first played recordings of elicited sentence imitations from preadolescent children to judges and found sex of child quite reliably assigned, although overall the average fundamental frequency was higher for the boys' voices than for the girls. Matching girls and boys for height and weight (as a rough guide to probable vocal tract size and fundamental range), they found that vowel formant structure differed significantly for voices judged most reliably as 'girl-like' or 'boy-like'. In subsequent studies, Sachs found judges able to discriminate sex on the basis of isolated vowels and of backward speech but less reliably than from sentences, which suggests that intonational characteristics may also be operative.

Support for this hypothesis is provided by Bennett and Weinberg who found that "monotonicity had a deleterious effect on the perception of femaleness and an enhancing effect on the perception of maleness" (1979, 183) for judges (all female) of children's speech. Fichtelius, Johansson, and Nordin (1980) isolated intonational features by filtering speech to eliminate segmental information. The result is a signal in which words are no longer recognizable but rhythmic and pitch features of the original speech signal—the 'suprasegmental' or 'melodic' characteristics—are unaffected. Although they are tentative in reporting results on the basis of their limited study of Swedish-speaking children, they note that "[t]he acoustic variable showing the greatest covariation with the respondents'

judgment of sex as well as the speakers' actual sex is the number of large frequency variations per time unit" (1980, 223). Again, both actual and perceived femaleness correlate with changing frequencies; in other words, with nonmonotonicity.

Perhaps even more startling is Terango's (1966) finding that adult males whose speech was heard as 'effeminate' by judges had, on the average, slightly *lower*-pitched voices than a matched group of males whom judges heard as nonremarkably 'masculine' in their speech. Terango did find significant acoustic differences between the two sets of voices: the group heard as effeminate used a significantly wider *range* of speaking pitches and changed pitch more frequently.[c]

My own informal observations suggest that when they imitate female speech, males (including young boys) emphasize intonational contours. Mimicry of female tunes shows pronounced and rapid pitch shifts (and probably also exaggerated shifts in intensity levels). Central to the stereotype of 'feminine' speech is the use of a relatively wide pitch range with frequent and rapid long glides. To imitate a woman by using an extreme version of this sort of pattern may be seen as a hostile act, and Austin suggests that to imitate a man by assuming the 'swoopy' patterns of the feminine stereotype is an extreme example of "derogatory imitation, one of the most infuriating acts of aggression one person can commit on another" (1965, 36).

Male intonational patterns do not seem to be imitated in a derogatory way, either in mocking of females or males. There are two possible reasons: (1) male intonations are heard as neutral—just as both sexes wear pants yet only women wear dresses, some patterns are heard as female while the rest are 'unmarked' for sex; (2) men lose by sounding woman-like, whereas women do not lose (perhaps they even gain in some contexts) by sounding man-like.[6] This does not mean that the male patterns are necessarily highly valued. Nonetheless, there is an asymmetry in imitative behavior to be explained.

Impressionistic accounts of men who are self-consciously rejecting a prescribed masculine role often refer to the use of special intonations. Newton says of a female impersonator, "The impression of femininity is conveyed more by the intonation, stress, and pronunciation than by the pitch itself. This intonation is parodying sweetness, rather mincing. It is a convincing imitation of affected female speech style" (1972, 72). Crystal (1971), a leading authority on English intonation, claims: "Intuitive impressions of effeminacy in English, for example,... are mainly [based on] non-segmental [features]: a 'simpering' voice, for instance, largely reduces to the use of a wider pitch-range than normal (for men), with

c. Gaudio (1994) did not find such differences in the speech of gay and straight men he recorded. But of course Terango was talking about perceptual judgments rather than about how actual gay and straight men might talk.

glissando effects between stressed syllables, a more frequent use of complex tones (e.g., the fall-rise and the rise-fall), the use of breathiness and huskiness in the voice, and switching to a higher (falsetto) register from time to time" (1971, 189). From the Terango study and other accounts of speech effeminacy and derogatory imitation, we can hypothesize that certain intonational variants are stigmatized markers of 'feminine' speech, indicating in male usage either overt flaunting of the code for sex-appropriate behavior (presenting oneself as 'gay', for example) or a derogatory imitation of women. Informal observation in the language laboratory indicates that male students are sometimes loath to reproduce patterns in a second language that involve the long and rapid glides (especially if reversed on a single syllable) that they associate with female or effeminate speech in American English.[7]

Comparing male speech perceived as effeminate to characterizations of global differences in female/male speech suggests the likely intonational cues for judgments of speakers on a femininity/masculinity dimension. Overall, without reference to particular contexts or to individual differences, female and effeminate male speech are apparently distinguished from 'ordinary' male speech in the following ways: the male pitch range is narrower than the female/effeminate and shows slower and less frequent pitch shifts.[d] Amplitude changes—linked to loudness—are not mentioned but are probably also important, with female/effeminate speech registering more and greater shifts in amplitude. We can call this cluster of factors DYNAMISM and say that female and effeminate male intonational variants are characteristically more dynamic than typical male patterns. By this I mean that we 'hear' dynamism as 'feminine', that dynamism is an especially salient cue to speaker gender.[8]

But do women (as a group) actually show different patterns of intonational variation from men? Is the stereotype of female speech a reflection (albeit exaggerated and distorted) of actual female speech melodies? The answer seems to be affirmative within a relatively small amount of systematically collected data. Takefuta, Jancosek, and Brunt (1972) had twelve female and twelve male speakers record ten sentences each, reading each sentence with different intonations, and found a significantly greater pitch shift in the female reading voices. Other reading studies suggest similar results, although it is unclear what the relation of oral reading styles is to ordinary speech.

Brend (1975), a linguist working in a tradition begun by Pike's (1946) landmark study of American English intonation, is one of the few to have

d. As Henton (1989) points out, I neglected in discussing pitch range to note that fundamental frequency range and perceived pitch range are distinct. The difference between 50 and 100 Hz is heard as the same difference in pitch as that between 100 and 200 Hz and that between 200 and 400 Hz. Clearly assessing relative dynamism has to take account of this exponential relation to fundamental frequency; the other component of dynamism, frequency of pitch shifts, is more straightforward to determine.

addressed the question of sex differences in intonation from a linguist's perspective. She does not specify how her data were obtained or whether she considered the interaction of sex with other sociolinguistic variables to arrive at her findings. Following Pike, she characterizes the patterns purportedly used by women as "polite and cheerful," "unexpectedness and surprise," "hesitation" (a pattern Pike suggests can indicate endearment, especially if used by a woman), and "incomplete and unexpected." She summarizes her results as follows:

> Men consistently avoid certain intonation levels or patterns. They very rarely, if ever, use the highest level of pitch that women use. That is, it appears probable that most men have only three contrastive levels of intonation, while many women, at least, have four. Men avoid final patterns which do not terminate at the lowest level of pitch, and use a final, short upstep only for special effects. . . . Although they also use short downglides . . . they seem in general to avoid the one-syllable long pitch glides, and completely avoid the reverse glides on one syllable. (Brend 1972, 86–87)

Brend's way of describing the differences implies that the sexes have different language systems. In particular, the suggestion that few men but many women use four contrastive levels (implying distinct inventories of basic units) is probably more accurately put in terms of sex-preferred modes of variation. Some of the differences she points to, however, almost surely do involve sex preferences in selections among available basic tune forms. The variation-based differences noted by Brend fit with the dynamic complex already described.

Intonational tunes are a major means by which speakers express their emotional involvement in a particular exchange, their attitudes, and their general 'stance' in the discourse. Bolinger (1970) has noted the difficult interpretive problem created by the fact that the same acoustic features can result either from a speaker's conscious manipulations or from internal phenomena not under the speaker's control. Thus, when we are judging data from groups of speakers who show differences in the intonational features associated with the expression of emotion, it is impossible to identify causal factors.

Keeping this in mind, it is noteworthy that the dynamic complex associated with the speech of women and effeminate males is also associated with emotional expressiveness. The degree of perceived emotion is strongly correlated with pitch range (at least for male speakers): the greater the range of pitches used, the greater degree of expressed emotion hearers perceive.[9] Thus, when compared as a group to men, women may well (simply on the basis of their dynamic pitch patterns) be heard as emotional. The patterns themselves may originate quite independently of their use in emotional expression, serving other purposes and having other causes. However, to be emotional is (in part) to express one's emotion. It is possible that part of women's *being* emotional in our culture derives from our *sounding* emotional. And we sound emotional because our

everyday 'tunes'—the patterns we use in ordinary circumstances when no extremes of emotion are felt or expressed—show a degree of dynamism found in men's tunes only in extraordinary circumstances of heightened emotional expression. Of course, the problem is that the culture does not simply categorize us as emotionally expressive (a positive and useful trait whose lack handicaps many males as well as some females) but also views us as unstable and unpredictable.

Whether or not expressed emotionality really bears any relation to the 'predictability' of one's behavior is one unanswered question. Even were that relation to exist it would not imply a deficiency (unpredictability) to overcome; after all, behaving predictably is not necessarily desirable. However, though emotional expressiveness and its possible concomitants might not be handicaps if androcentric biases were eliminated, the fact remains that one's intonational patterns are not really adequately expressive of emotions if they are heard in reference to a presumptive 'ideal' that inadequately reflects usage of the entire speech community. The young male apparently learns to 'sound masculine' (as he learns to 'sound cool'), whereas the culture believes that the young female is destined by her biological endowment to be at the mercy of inner psychic upheavals which produce her dynamic tunes. To some extent, such a belief simply reflects ignorance of the fact that intonational patterns are basically cultural constructs (different cultures using their own distinctive patterns and 'meanings'), although they are 'internalized' very early and not easily subject to conscious modification.

To make matters more complicated, intonation does have a 'natural' base as well. The quickened breathing and muscular tension that accompany certain kinds of heightened emotion can have an effect on our speech melodies: increased fluctuations in respiration and muscular activity will produce more dynamic tunes. And many of the culture-specific 'meanings' associated with particular melodies represent conventionalized metaphors that refer to the nonlinguistic ('natural') significance associated with certain features of melodies. For example, to keep the voice level, to speak in a 'flat' monotone, requires suppression of certain 'natural' physical impulses. It is thus a 'natural' indicator of 'control' over one's internal mechanisms. By extension, the style can come to signify 'control' more generally and can be thus heard and evaluated that way. As Bolinger (1964) puts it, intonation is "around the edge of language." Because of this interplay between the natural and cultural 'meanings', intonation is readily available and perhaps especially effective as a cultural symbol of woman's perceived greater 'naturalness', one important aspect of which is the 'free' expression of her emotions.[10] This is easily perceived by male-dominated culture as a failure to control emotion and a reflection of her innate inferiority to the male. Of course, one could equally well emphasize the positive side of dynamic and expressive communicative behavior and suggest that many males apparently fail to achieve the expressive versatility of most females.

The connection of the female/male dynamic intonational stereotype with stereotyped emotionally expressive behavior could conceivably be explained as either physiologically based (e.g., due to purported inner homeostatic mechanisms that keep most males on a more even keel than most females) or socioculturally based (due to learned sex typing of other kinds of emotionally expressive behavior such as crying) or both.[11] Note that I refer to "purported" homeostatic mechanisms; Barrie Thorne has reminded me that there is evidence from male pathology that it's not some inner 'even keel' but a bottling up or repression. It is still, of course, possible that females have a tendency to more internal volatility and that males are handicapped by a tendency toward internal stagnation. My own guess is that the contribution of biological factors is likely to be minuscule here. Whatever the ultimate finding on that score, it is clear that society and culture have played an enormous role in shaping our emotional expressiveness. The point of interest in the present discussion is that women *are* (culturally) emotional because they sound that way.

Dynamism, by and large, seems to derive from variation-based differences in women's speech compared to men's, although it is possible that selection-preferences also contribute to the general dynamic picture. (There are too little data to even begin to decide just what factors are involved.) Because of the significance attached to variants (e.g., as expressive of emotionality), however, it is quite possible for speakers to include variation preferences as well as unit selections as part of a particular strategic orientation toward speech. In particular, dynamism can be used as a positive resource for speakers. To sound highly emotional might enable one to attain ends not reachable by calm behavior if one is a subordinate, such as a child interacting with an adult or a woman with a man. And of course certain situations promote the expression of emotion: the care of a child puts greater demands on emotional expressiveness than repairing telephone lines.

In addition to dynamism as a dimension on which female intonations are said to differ from male, it is said that the sexes tend to favor different endings (often called "terminals" by linguists) for their tunes. According to Brend (1972), men avoid final patterns that do not terminate at the lowest level, using rising terminals only for special effects (whatever that might mean—they certainly do use such patterns). Pike (1946) also suggested that women were primary users of many patterns with final rise. In her informal descriptions, Eble (1972) mentions the "'whining, questioning, helpless' patterns, which are used predominantly by women." To use a rising terminal rather than a falling terminal is, as discussed above, to select a different basic 'tune'. A syntactic analogy is the choice between issuing directives in an interrogative form ("Would you put out the garbage?") or an imperative form ("Put out the garbage"). We impute different intended structural messages on the basis of the selection of units. Patterns of such differences indicate strategic orientations. The difficulty, of course, is determining what the intended messages are, since intonational 'words' can

either provide a 'frame' for the text they carry or can have a meaning that is superimposed on (and largely independent of) that text. The discussion of a particular example that follows will illustrate these points.

The English high-rise or 'question' intonational pattern, as noted earlier, ends with a rising terminal that reaches a level higher than earlier parts of the utterance. Lakoff (1975) has claimed that women are more likely than men to use what she calls an "inappropriate question intonation," as in the following:

HUSBAND: When will dinner be ready?
WIFE : Six o'clock?

Lakoff claims that the wife's rising terminal indicates her failure to make a statement when discourse requires it, thus signaling uncertainty or lack of self-assertiveness. However, as was argued in McConnell-Ginet (1975), there are many alternative functions that this high-rise tune can be serving. The wife in the scenario may be heard as both stating and questioning. Her unexpressed question may be "Why do you need to know?" or "Are you listening to me?" or "Do you want to eat earlier?" or any of a host of other possibilities. Or, less specifically than questioning, she may be simply indicating desire for a continuation of the discourse. Ladd (1980) argues that we need not appeal to 'implicit' questioning but should understand the high rise as conveying nonfinality or incompleteness (of which tentativeness, doubt, and questioning are simply special instances).

Men certainly do use the high-rise intonational pattern to respond to questions for which they have the answer, and there is no evidence that such uses are heard as 'effeminate' or even particularly hesitant or indecisive. Not surprisingly, those who favor this tune for virtually all utterances are probably heard as somewhat hesitant and nonassertive.[12] Although there may be more women than men with this habit, the reasons are unlikely to be found in the pattern's being associated with 'femininity'. If there are sex differences in this usage, they will arise because one sex has more need or liking than the other for this particular communicative ploy: accompanying one explicit speech act (roughly, declaring) with another, which is implicit questioning, or more generally, requesting some additional input from the other party to the exchange.[e]

Do women and men actually tend to answer *Wh*-questions with different contours? (*Wh*-questions include "*When* will dinner be ready?" "*Where*

e. McLemore 1992 is an extensive ethnographic study in a Texas sorority that looks at final rises in some detail and finds that the young women in charge of the sorority use them extensively—they did not convey in these contexts any kind of timidity or insecurity but often occurred as part of authoritative speech in house meetings. At the same time, these young women told McLemore that outside the sorority they had to modify their speech in order to be taken seriously.

do you live?" and "*What's* your name?") The answer seems to depend, as one might expect, on the nature of the communicative context. Edelsky (1979) compared use of high rise, fall, and another pattern that she calls fall rise. This fall-rise, called 'low-rise' in McConnell-Ginet (1978), is heard as having a definite rising terminal, but it is not perceived as at all 'incomplete' or 'questioning' like the high-rise. Acoustically, its final rise usually stops at a point below some earlier high in the utterance. Schematically, we can contrast the three patterns as follows:

A. Hel$_{lo}$ Fall

B. Hel$_{lo}$ Fall Rise or Low Rise

C. Hel^{lo} High Rise ('Question')

Edelsky's female and male subjects were not differentiated in their use of the high rise. In contrast, pilot studies I have been conducting (McConnell-Ginet 1978 gave a preliminary report) show women using more high rise and more low rise. Edelsky's study had interviewers approach people in a student union and ask "Where were you born?" or "What's your favorite color?" whereas our interviewers asked (in front of a campus landmark) "What building is this?" The Edelsky questions were survey in type; ours were the kind one expects from strangers. Whether or not this difference in the communicative context explains the different findings, it is clear that we need considerably more data from real communicative exchanges if we are to have any real insight into 'how she says it' or, for that matter, 'how he says it'.

In addition, we need more systematic study of how tunes are interpreted. Edelsky's research has begun this by investigating the contribution of the three contours to evaluation of persons using them in response to the "Where were you born?" question. She found high-rise and fall associated with stereotypically 'feminine' and 'masculine' qualities, respectively, with the low-rise in between. For instance, judges heard a high rise response as sociable whereas the fall was self-centered. (The study used the matched-guise technique so that, unbeknownst to experimental subjects, judgments were made of the same voice with different tunes.) How do judges arrive at such evaluations? My conjecture is that they figure out what sort of strategy would lead someone to speak like that in the hypothetical situation. Then they evaluate people on the basis of their opting for that strategy (and, thus, for that mode of speaking). This is, of course, an unsubstantiated claim that requires considerable elaboration and investigation. It is important, however, to consider somewhat more carefully than we have in the past the possible bases on which judges evaluate speech samples.[13] It is also important to find more direct tests of what speakers intend and hearers attribute to uses of particular tunes in a given situation.

Clarion calls to further research are easier to sound than to obey. One of the reasons intonation continues to baffle linguistic investigators—we

still cannot adequately characterize 'how she said it'—is that the tunes of speech shade into one another rather than being sharply distinguished like the sounds of speech. Traditional linguistic research—"ordinary linguistics" in Hymes's terms—deals with discrete entities, in other words, with either-or oppositions rather than more-or-less gradations. Where continuously varying parameters are significant, it is helpful to supplement human observations with instrumental measurements. We can also take advantage of such sophisticated machines as speech synthesizers to subject explicitly formulated hypotheses to controlled tests. I do not suggest that technology yields insight or that carefully collected data are the magic key to understanding the role of intonation in women's and men's lives. But I do argue that, in order to understand the ways in which 'how she said it' can work for and against her, we need to widen our descriptive base. Women certainly do not at all times in all places "talk in italics," to use Lakoff's characterization. We need to know when, where, and why does someone talk 'like a woman', and, an obvious but often overlooked question, who talks 'like a woman'? We also need to know how sex differences in intonation develop and what their consequences are for women's and men's lives.[14]

2. Toward a theory of sex differences in intonation

'Ordinary linguistics' leaves unanswered many of the most interesting questions about the function of language in people's lives. Linguists have recently, however, expanded the horizons of 'ordinary linguistics'. This expansion is partly due to social and political pressures (originating in the civil rights movement of the 1960s and continuing in the women's movement) to understand how language is used to support the status quo and to serve the interests of the powerful. Such understanding can suggest strategies to change the status quo and can be used to increase appreciation of speech styles of subordinates. Even apart from such practical concerns, however, many linguists have begun to see that the 'ordinary' linguistic practice of abstracting from the social context and focusing on a mythic 'ideal' speaker in splendid isolation from other human beings, though a necessary part of linguistic analysis, is not enough to explain how language works. Unless language is put back into the social setting from which it is extracted for initial analysis, the processes of language change, for example, cannot be properly understood.[15] But even an expanded and 'extraordinary' linguistics will not be able to answer all the issues raised by examining sex differences in language use. We must turn to other disciplines such as psychology, sociology, anthropology, and, more generally, women's studies scholarship. Because it requires sophistication in all these areas, a comprehensive theory of intonation (in a man's world or anywhere else) awaits future collaborative research. The following outlines a preliminary theoretical perspective on sex differences in intonation.

1. In oral communication, speech melodies are primary cues of speaker sex.
2. The speech community explicitly associates certain intonational patterns with the speech of women. These patterns function as part of a cultural stereotype and can be used in derogatory imitation directed against women or men. The negative connotations of the stereotype are the products of misogyny in an androcentric culture. But 'feminine' patterns can also be adopted by males to express a rejection of socially imposed canons of sex-appropriate behavior. American English speakers do not appear to exploit a masculine intonational stereotype for purposes of negative imitation or rejection of gender identification by females; stereotyped tunes are 'feminine' only (more precisely, 'non-masculine').[16] Sex-stereotyped tunes are not universal, however: what is perfectly ordinary for men in one language may sound effeminate in another.
3. In addition to the overt stereotypes, there are certain general features of intonation that correlate with speaker sex. To present oneself as feminine or masculine, one shifts speech melodies (probably not consciously) toward the extremes identified with female and male speech, respectively. It is not the sex of the other conversational participants that determines how strongly feminine or masculine a speech style will be used, but the speaker's need or desire for a particular mode of self-presentation. A woman may wish to deemphasize or emphasize her sex in working with male colleagues, and she may wish to express her 'solidarity' with or dissimilarity to female colleagues.[17] These factors are not necessarily articulated in a conscious way, and some uses of particular tunes may be attributable to a particular individual's idiosyncratic habits. Hence, it is difficult (in some cases, impossible) to determine the speaker's attitudes and aims from the evidence of her (or his) tunes. However, clear-cut cases (where nonlinguistic knowledge can inform us of participants' attitudes toward and interests in a particular interaction) can permit us to identify the intonational markers of speaker sex that function as gender symbols for the speech community.
4. Our culture, overtly espousing sexual egalitarianism and providing many shared spheres of activity, predisposes us to believe that learned behavior is androgynous and that actual sex differences in behavior must be due to biological rather than social and cultural factors. The belief that intonation directly reflects internal states promotes its use to mark gender. Because certain features of intonation are in fact affected by a speaker's internal state, those features are often (incorrectly) believed to be consistently reliable indicators of speakers' attitudes and emotions.

5. Intonational 'habits' are established without conscious consideration of available options and perhaps partly in unreflective response to available models.[18] The differences in dynamic range that have been observed in some studies probably arise chiefly from male efforts to restrict range. The extreme of 'masculine' intonation in American English is a complete monotone,[19] whereas there are (theoretically) no limits at the other end of the scale. Masculine speech melodies can thus be heard as metaphors for control, for 'coolness', and feminine speech melodies as uncontrolled, untamed by culture. The association of feminine and masculine extremes with the full disclosure of emotion and with its repression, respectively, reflects the general connection of the masculine extreme with constraint.
6. The 'feminine' habit of keeping pitch and loudness changing may serve the important function of attracting and holding the listener's attention. Women may need this device more than men because of (1) their relative powerlessness (dynamic rendition of the text is invaluable in holding the listener's attention if one lacks the authority to require that attention) and (2) their frequent contact with young children who are not yet socialized to attend reliably to verbal signals.[20] If these suggestions are viable, increased or relatively great dynamism should be a feature of 'powerless' speech and also of interaction with young children.[f]
7. Because the primary linguistic function of intonation is to indicate how an utterance 'fits' in a discourse—what the speaker is doing by means of uttering a particular text in a particular context—women and men will typically use different patterns for equivalent situations because they have different strategies for speech action. In speech as in other areas women and men frequently 'act' differently, because of differences in their early socialization and their access to power and because of the general expectations attached to their social positions. In a particular case one may not know the complex of causes of a person's intonational strategies—some people 'wheedle' because of a vocal habit established in early childhood, others because they calculate that it is most likely to bring the ends they desire, still others because no other means of attaining their goals has occurred to them. Specific tunes are virtually *never* selected at a conscious level. It should be noted that a particular individual may have one strategy or general

f. In retrospect, I may have overemphasized relative lack of power or authority here, although that certainly can be a factor. Dynamism can indicate engagement, and this can help hold listeners' attention. Delph-Janiurek (1999) found male teaching staff in an English university using much more restricted—less dynamic—intonation than their female colleagues, but he also found that students tended to judge the resulting almost monotonic lecture styles boring.

> communicative goal in mind yet be interpreted by her (or his) addressee as motivated by some quite different factor. This possibility of miscommunication is a consequence of the fact that the same forms serve multiple functions.

This sketch of a theory of sex differences in intonation raises rather than answers questions.[21] For example, if subsequent investigation should establish that women are hurt by their use of intonational patterns that male culture devalues, ought we try to train ourselves in new melodic habits or strategies? Not necessarily. To accept the values set by the man's world is to continue residence in woman's place. Recognition of the positive values of some now generally negatively valued tunes can help women (and other subordinated speakers) develop their own speech powers as they choose. Women's tunes probably can be interpreted to keep her in her place: on her back and out of power. But views of women's intonational styles as uncontrolled (uncontrollable) and ineffectual (lacking in authority) can be challenged once the androcentric origins of these views are clearly understood.

Notes

1. See, for example, the essays in Thorne et al. (1983) and in the earlier Thorne and Henley (1975). In addition to such studies, my own approach to the study of language in social life owes much to such work as that in Ervin-Tripp (1973), Goffman (1969), Labov (1972), and Gumperz and Hymes (1972).

2. For further discussion of these issues, see McConnell-Ginet (1979), which is a reply to Kean (1979).

3. Brown (1980) develops the notion of sex-typed 'styles' as generated by strategies women and men develop from their distinct social experiences, drawing on the detailed and very interesting theory of universals of politeness in Brown and Levinson (1978).

4. See Majewski, Hollien, and Zalewski (1972); Hollien and Jackson (1973); Hollien and Shipp (1972); also relevant is Michel, Hollien, and Moore (1965).

5. Aronovitch (1976) found little correlation between personality judgments and average pitch, but his study was not designed to allow isolation of pitch from other variables. That high pitch tends to be devalued, especially if combined with relative loudness, is suggested by the unquestioned assumption of von Raffler-Engel and Buckner 1976 that women's high-pitched voices are intrinsically unpleasant if loud.

6. That the second explanation has force is suggested by the fact that male subjects, asked to read a passage "as you think a woman would" in one of the studies reported in McConnell-Ginet (1978), were very reluctant to do so; whereas women were much more cooperative in reading "as you think a man would" (and tended to comply by monotonizing their reading voice). Cheris Kramarae (personal communication) notes that courtship is a context in which women might lose by sounding 'like a man'. Barrie Thorne (personal communication) observed monotonic intonation in the speech of a fourth-grade girl who had been disparagingly described by another girl as "like a boy." The comment mentioned "looks," but Thorne noted that the girl in question had long hair and suggested that the impression of "like a boy" might well have been based in part on "sounds," even though only "looks" got noted explicitly by the other girl.

7. Suggested to me by Richard Leed, Professor of Slavic Linguistics at Cornell University, on the basis of his experience with students learning Russian.

8. Both Bennett and Weinberg (1979) and Terango (1966) provide significant empirical support for this view of our perception of dynamism.

9. See, for example, Huttar (1968) and Soron (1964). Literature on intonational expression of emotion is voluminous but not methodologically very sound. See, however, Uldall (1960), Greenberg (1969), and Reardon (1971). See also the section on intonation and emotion in Bolinger (1972). A problem often ignored is that the specific import of a tune depends on the text it carries and the context in which it occurs, a point made in Ladd (1980). See also Gunter (1974) and Liberman and Sag (1974).

10. See Ortner (1974) for discussion of connections between nature/culture and female/male dichotomies. Liberman (1975) suggests that certain global features of intonational patterns can play a role as incompletely conventionalized vocal symbols.

11. There are people who automatically assume sex differences in behavior are our anatomical destiny. See Aronovitch (1976) for mention of some psychologists' belief in "physiological differences in homeostatic mechanisms" leading to "less emotional balance in the female than in the male." Whether or not biological differences are involved, the important point is the significance of cultural and social influences and the existence of great individual variation among individuals of each sex.

12. My mail indicates that women's supposed 'timidity' is indeed a popular explanation of the high rise on declaratives. In response to a quotation from me in a recent newspaper article suggesting that the high rise is a way of asking a question whose content is not made explicit, I received a number of letters from people who wanted to 'help' with my research, suggesting that the explanation was women's "fear of asserting themselves." My guess is that people are more likely to offer the 'fear' account if a woman's usage is involved than if interpreting the high-rise pattern on a man's declarative. The classic study of how the same behaviors are differently labeled if ascribed to female rather than to male is Condry and Condry (1976).

13. Sachs 1975 (167) addresses the issue of the basis of speech evaluations. Drawing on research by Frederick Williams and his colleagues, she suggests the possibility that judges label speech on the basis of social stereotypes. Although her discussion deals primarily with the characterization of the speech rather than with attributes imputed to the speaker on the basis of the speech (the subject of most research on evaluation of women's speech), similar questions are involved. For examples of attribution to women of personal characteristics on the basis of their speech, see Giles et al. (1980), who report on the contribution of a regional accent to people's first impressions of a woman's attitudes and behavioral style. They also found that women with different outlooks on feminist issues 'sounded' different to judges. What features of speech were involved we don't know, but it is at least plausible that intonational characteristics play a role.

14. For several years I have been conducting exploratory research with the help of a number of Cornell University students to test some of the hypotheses presented in this paper. We have acoustic data from reading studies and from naturalistic observation that support the "dynamism" hypothesis above. We have also used the "matched-guise" technique first described in Lambert et al. 1960 to

test contribution of different contours to judgments of speakers' traits, and our results are similar to those reported in Edelsky (1979). Our goal eventually is to devise more direct tests of conveyed meaning and to use synthetic speech to manipulate particular acoustic variables more systematically. I have been assisted in this research by Dr. Susan Hertz, who has developed the Cornell speech synthesis system; David Walter, phonetics laboratory technician; and the following undergraduate research assistants: Susan Costello, Lisa Fine, Elizabeth Kaplan, Jennifer Klein, Cynthia Putnam, and Daniel Segal. McConnell-Ginet (1978) reported some initial results, but the research is really still in early stages and will not be ready for publication for several more years.

15. See Weinreich, Labov, and Herzog (1968) for this viewpoint. I want to emphasize again that the view that abstraction from the social context is inadequate does *not* imply that such abstraction is dispensable as a component of linguistic analysis. See Kean (1979) and McConnell-Ginet (1979) for further discussion.

16. Barrie Thorne has raised the possibility that some women may also announce a rejection of socially imposed canons of sex-appropriate behavior through their linguistic choices. However, the asymmetry in intonation seems similar to that between dresses (a 'feminine' mode of clothing, carrying a strong message when worn by men) and pants (though not 'feminine' by any means, their being worn by a woman need not convey any special message about attitudes toward sexual norms). For a woman to eschew markedly 'feminine' practices is not equivalent to a man's adopting these same practices.

17. Using the stereotypical 'feminine' tunes is only one way available to women to 'bond' with one another. Barrie Thorne (personal communication) observes extensive use of the high rise intonation in California among feminists speaking to one another. As she suggests, it probably functions as an invitation to others to speak, emphasizing the collectivity of the group and underscoring a speaker's desire not to present herself as a 'heavy'. There is much to be learned about how we deal with one another as women and how those 'dealings' are changing as feminism transforms the contexts in which they occur.

18. See account in Lieberman (1967: 45–46) of a thirteen-month-old girl and a ten-month-old boy who used higher fundamental frequencies when 'talking to mother' than when 'talking to father', presumably in imitation of their parents' speech. Very young children also show intonational 'style-shifting': the use of certain varieties of speech melody to mark the nature of an interaction; see Weeks (1970).

19. I have observed some adolescent males using an extremely monotonic style, especially in peer interactions, and decreased dynamism in adolescent males has been noted by many observers though never, so far as I know, systematically studied. For adult male speech, it appears to be the case that any variation in dynamism is seen as significant, whereas female speech is already presupposed to be dynamic. See Aronovitch (1976) for this interpretation of his results (esp. 218).

20. See, for example, Kaplan (1970), a study that found infants attended to pitch shifts and suggested that intonation plays an important role in aiding the child's language acquisition.

21. In addition to the works already cited, my own understanding of English intonation has drawn much from Crystal (1969). Future studies must also take account of Waugh and van Schooneveld (1979), a collection of essays on late 1970s research on intonation.

References

Aronovitch, Charles D. (1976). The voice of personality: Stereotyped judgments and their relation to voice quality and sex of speaker. *Journal of Social Psychology* 99: 207–220.

Austin, William (1965). Some social aspects of paralanguage. *Canadian Journal of Linguistics* 2: 31–39.

Bennett, Suzanne and Bernd Weinberg (1979). Sexual characteristics of pre-adolescent children's voices. *Journal of the Acoustical Society of America* 65: 179–189.

Bolinger, Dwight (1964). Around the edge of language: Intonation. *Harvard Educational Review* 34: 282–293. Reprinted in Bolinger 1972.

——— (1970). Relative height. In P. R. Leon, G. Faure, and A. Rigault (eds.), *Prosodic feature analysis*. Montreal: Marcel Didier. Reprinted in Bolinger 1972.

——— (ed.) (1972). *Intonation*. Harmondsworth, UK: Penguin Books.

Brend, Ruth M. (1972). Male-female intonation patterns in American English. *Proceedings of the Seventh International Congress of Phonetics Sciences, 1971*. The Hague: Mouton. Reprinted in Barrie Thorne and Nancy Henley (eds.), *Language and sex: Difference and dominance*. Rowley, MA: Newbury House, 1975.

Brown, Penelope (1980). Why and how are women more polite: Some evidence from a Mayan community. In Sally McConnell-Ginet, Ruth Borker, and Nelly Furman (eds.), *Women and language in literature and society*. New York: Praeger.

Brown, Penelope, and Stephen Levinson (1978). Universals of language usage: Politeness phenomena. In Esther Goody (ed.), *Questions and politeness: Strategies in social interaction*. Cambridge Papers in Social Anthropology, vol. 8. Cambridge: Cambridge University Press, 56–311.

Coleman, Ralph O. (1976). A comparison of the contributions of two voice quality characteristics to the perception of maleness and femaleness in the voice. *Journal of Speech and Hearing Research* 19: 168–180.

Condry, John, and Sandra Condry (1976). Sex differences: A study of the eye of the beholder. *Child Development* 47: 812–819.

Crystal, David (1969). *Prosodic systems and intonation in English*. Cambridge: Cambridge University Press.

——— (1971). Prosodic and paralinguistic correlates of social categories. In Edwin Ardener (ed.), *Social anthropology and language*. London: Tavistock.

[Delph-Janiurek, Tom (1999). Sounding gender(ed): Vocal performances in English university teaching spaces. *Gender, Place and Culture* 6: 137–153.]

Devereux, George (1949). Mohave voice and speech mannerisms. *Word* 5: 268–272. Reprinted in Dell Hymes (ed.) (1964). *Language in culture and society*. New York: Harper & Row.

Eble, Connie C. (1972). How the speech of some is more equal than others. Paper presented at Southeastern Conference on Linguistics, University of Tennessee, Knoxville, TN.

Edelsky, Carole (1979). Question intonation and sex roles. *Language in Society* 8: 15–32.

Ervin-Tripp, Susan (1973). *Language acquisition and communicative choice*. Stanford, CA: Stanford University Press.

Fichtelius, Anna, Irene Johansson, and Kerstin Nordin (1980). Three investigations of sex- associated speech variation in day school. In Cheris Kramarae

(ed.), *The voices and words of women and men*. Oxford: Pergamon Press, 219–226. Also in *Women's Studies International Quarterly* 3 (2/3): 219–226.
[Gaudio, Rudolf P. (1994). Sounding gay: Pitch properties in the speech of gay and straight men. *American Speech* 69: 30–57.]
Giles, Howard, Philip Smith, Caroline Brown, Sarah Whiteman, and Jennifer Williams (1980). Women's speech: The voice of feminism. In Sally McConnell-Ginet, Ruth Borker, and Nelly Furman (eds.), *Women and language in literature and society*. New York: Praeger.
Goffman, Erving (1969). *Strategic interaction*. Philadelphia: University of Pennsylvania Press.
Greenberg, S. Robert (1969). An experimental study of certain intonational contours in American English. *UCLA Working Papers in Phonetics* 13, Los Angeles, California.
Gumperz, John J., and Dell Hymes (eds.) (1972). *Directions in sociolinguistics*. New York: Holt, Rinehart & Winston.
Gunter, Richard (1974). *Sentences in dialog*. Columbia, SC: Hornbeam Press.
[Henton, Carolyn (1989). Fact and fiction in the description of female and male speech. *Language and Communication* 9: 299–311.]
Hollien, Harry, and B. Jackson (1973). Normative data on the speaking fundamental frequency characteristics of young adult males. *Journal of Phonetics* 1: 117–120.
Hollien, Harry, and T. Shipp (1972). Speaking fundamental frequency and chronological age in males. *Journal of Speech and Hearing Research* 15: 155–159.
Huttar, George (1968). Relations between prosodic variables and emotions in normal American English utterances. *Journal of Speech and Hearing Research* 11: 481–487.
Hymes, Dell (1971). Sociolinguistics and the ethnography of speaking. In E. Ardener (ed.), *Social anthropology and language*. London: Tavistock.
Kaplan, Eleanor L. (1970). Intonation and language acquisition. *Papers and Reports on Child Language Development* 1: 1–21.
Kean, Mary-Louise (1979). Comment on McConnell-Ginet's "Intonation in a Man's World." *Signs: Journal of Women in Culture and Society* 5: 367–371.
Labov, William (1972). *Sociolinguistic patterns*. Philadelphia: University of Pennsylvania Press.
Ladd, D. Robert (1980). *The structure of intonational meaning: Evidence from English*. Bloomington: University of Indiana Press.
[——— (2008). *Intonational phonology*. 2nd ed. Cambridge: University of Cambridge Press.]
Lakoff, Robin (1975). *Language and woman's place*. New York: Harper & Row.
Lambert, Wallace E., R. C. Hodgson, and Stephen Fillenbaum (1960). Evaluational reactions to spoken languages. *Journal of Abnormal and Social Psychology* 60: 44–51.
Liberman, Mark (1975). The intonational system of English. Doctoral dissertation, MIT, Cambridge, Mass.
Liberman, Mark, and Ivan Sag (1974). Prosodic form and discourse function. *Papers from the 10th Regional Meeting of the Chicago Linguistic Society*. Department of Linguistics, University of Chicago.
Lieberman, Philip (1967). *Intonation, perception, and language*. Cambridge, Mass.: MIT Press.
Majewski, W., H. Hollien, and J. Zalewski (1972). Speaking fundamental frequency characteristics of Polish adult males. *Phonetica* 25: 119–125.

McConnell-Ginet, Sally (1975). Our father tongue. *Diacritics* 5: 44–50.
——— (1978). Intonation in the social context: Language and sex. Paper presented at the 9th International Congress of Sociology, Uppsala, Sweden.
——— (1979). Reply to Kean. *Signs: Journal of Women in Culture and Society* 5: 371–372.
[McLemore, Cynthia (1992). *The Interpretation of L*H in English*. Linguistic Forum 32, ed. Cynthia McLemore. Austin: University of Texas Department of Linguistics and the Center for Cognitive Science.]
Michel, J., H. Hollien, and P. Moore (1965). Speaking fundamental frequency characteristics of 15, 16 and 17-year-old girls. *Language and Speech* 9: 46–51.
Newton, Esther (1972). *Mother Camp: Female impersonators in America*. Englewood Cliffs, NJ: Prentice-Hall.
Ortner, Sherry B. (1974). Is female to male as nature is to culture? In Michelle Zimbalist Rosaldo and Louise Lamphere (eds.), *Woman, culture and society*. Stanford, CA: Stanford University Press.
[Pierrehumbert, Janet (1980). *The phonology and phonetics of English intonation*. MIT PhD dissertation, distributed in 1988 by Indiana University Linguistics Club.]
Pike, Kenneth (1946). *The intonation of American English*. Ann Arbor: University of Michigan Press.
Reardon, R. C. (1971). Individual differences and the meanings of vocal emotional expressions. *Journal of Communication* 21: 72–82.
Sachs, Jacqueline (1975). Cues to the identification of sex in children's speech. In Barrie Thorne and Nancy Henley (eds.), *Language and sex: Difference and dominance*. Rowley, MA: Newbury House.
Sachs, Jacqueline, P. Lieberman, and Donna Erickson (1973). Anatomical and cultural determinants of male and female speech. In Roger W. Shuy and Ralph W. Fasold (eds.), *Language attitudes: Current trends and prospects*. Washington, DC: Georgetown University Press.
Soron, Henry I. (1964). On relationships between prosodic features and lexical content of speech. *Journal of the Acoustical Society of America* 36: 1048.
Takefuta, Y., E. Jancosek, and M. Brunt (1972). A statistical analysis of melody curves in intonations of American English. *Proceedings of the Seventh International Congress of Phonetic Sciences* (1971). The Hague: Mouton.
Terango, Larry (1966). Pitch and duration characteristics of the oral reading of males on a masculinity-femininity dimension. *Journal of Speech and Hearing Research* 9: 590–595.
Thorne, Barrie, and Nancy Henley (eds.) (1975). *Language and sex: Difference and dominance*. Rowley, MA: Newbury House.
Uldall, Elizabeth (1960). Attitudinal meanings conveyed by intonational contours. *Language and Speech* 3: 233–234.
von Raffler-Engel, Walburga, and Janis Buckner (1976). A difference beyond inherent pitch. In Betty Lou Dubois and Isabel Crouch (eds.), *The sociology of the languages of American women*. San Antonio, TX: Trinity University, 115–119.
Waugh, Linda R., and C. H. van Schooneveld (eds.) (1979). *The melody of language: Intonation and prosody*. Baltimore, MD: University Park Press.
Weeks, T. (1970). Speech registers in young children. *Papers and Reports on Child Language Development* 1: 22–42.
Weinreich, Uriel, William Labov, and Marvin Herzog (1968). Empirical foundations for a theory of language change. In Winfred Lehmann and Hakov Malkiel (eds.), *Directions for historical linguistics*. Austin: University of Texas Press.