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Negation and Speech Style in Professional American English¹

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1. Introduction

Negation is a commonly observed phenomenon in linguistic activities, and therefore can be a powerful tool with which to assess the style of language if an appropriate standard of judgement has been established. The present paper aims to make a small contribution to this area by analyzing some spoken data included in the Corpus of Spoken Professional American English. While negation is a popular research topic, studies within the variationist framework in contemporary English are often directed towards dialects instead of standard English. Multiple negation (also called negative concord) in nonstandard English has, for example, often attracted attention in previous studies.² Other forms of negation frequently explored in relation to non-standard English include: *never* used for the past tense, the occurrence of *ain't*, and other forms of negative contraction.³

The present paper, by contrast, focuses upon a standard but spoken variety of American English. More specifically, it investigates how different speech styles are characterized by various forms of negation. Although it also intends to highlight differences due to the gender of the speaker, the results in the end reveal that

¹ The initial stage of this research was supported by the Institute of Statistical Mathematics, Japan (2007-ISM-CRP-2024).

² Previous studies dealing with multiple negation in contemporary English dialects are numerous. See, for example, Labov (1972) and Anderwald (2002, 2005).

³ See, for example, Beal & Corrigan (2005) and Howe (2005).

differences due to settings are more significant than gender differences. Aspects of negation explored in the following analysis include the frequencies of negation itself, so-called *not*-negation (as against *no*-negation),⁴ and negative contraction. The present study also conducts multivariate analyses by using different negative forms to see how different settings are correlated with one another.

2. Data

The data used in the present research is what we call CSPAE Gender, which is an extract from the Corpus of Spoken Professional American English (CSPAE).⁵ The original corpus, CSPAE, consists of over two million words and includes relatively accurate transcripts of conversations in four formal settings in the United States from 1994 to 1998. The speakers involved number about 400, and the settings are: press conferences held at the White House and other locations (**White House**); faculty meetings at the University of North Carolina (**Faculty Meetings**); national meetings on mathematics (**Mathematics**); and national meetings on reading (**Reading**). While they are all formal in nature, some settings are more formal than others. The White House is the most formal of the four, for example, in that the speakers there are exposed to a public audience. Likewise, the Faculty Meetings are more formal than the meetings of Mathematics and Reading in that the former is expository in nature while the latter is more exploratory thus displaying more spontaneous interactions among the participants. Our previous studies indicate that this ordering of formality in terms of settings is largely reflected in the scale of formality in language. For further details, see Iyeiri, et al. (2004, 2005, 2011) among others.

CSPAE Gender, which is a working subcorpus of CSPAE compiled for our research purposes, inherits the nature of CSPAE. It consists of the above-mentioned four settings,

⁴ For the definitions of *not*-negation and *no*-negation, see Section 3.

⁵ © 2000 Michael Barlow.

but includes only the utterances by speakers whose gender is known. We have manually excluded the utterances whose speakers are unknown and obtained approximately 1.6 million words.⁶ The present study is based upon CSPAE Gender, although highlighting gender differences is not necessarily the central target of this discussion. Table 1 lists the files included in the corpus:

Table 1. CSPAE Gender

White House		Faculty meetings		Mathematics		Reading	
Male	Female	Male	Female	Male	Female	Male	Female
WH94-5m, WH96-7m	WH94-5f, WH96-7f	FM95-6m, FM97-8m	FM95-6f, FM97-8f	CM597m, CM697m, CM797m, CM897m, CM8a97m	CM597f, CM697f, CM797f, CM897f, CM8a97f	CR6a97m, CR6b97m, CR797m	CR6a97f, CR6b97f, CR797f

In principle, the numbering follows the system of the original CSPAE corpus: “94-5” for 1994 to 1995 and “597” for May 1997. “6a97” and “6b97” both indicate June 1997, but they are stored in two separate files. The lower case letters at the end of the file name are unique to CSPAE Gender and indicate the gender of the speakers: *m* for male speakers and *f* for female speakers. Hence, “WH94-5m” indicates male utterances recorded in the White House press conferences held in 1994 to 1995. The following analyses are based upon these files, although the results are quite often summarized in the form “White House (male)” (including WH94-5m and WH96-7m), “Mathematics (female)” (including CM597f, CM697f, CM797f, CM897f, and CM8a97f), etc.

3. Some previous studies on negation in contemporary English

Although studies on negation in contemporary English are numerous, those within the variationist framework are relatively restricted. Many of the studies of the latter type are

⁶ Utterances whose speakers are unknown are most typically marked as “voice” in CSPAE. They have been eliminated in the process of compiling CSPAE Gender.

concerned with negation in different dialects, dealing most typically with the occurrence of double or multiple negation, where two or more negative words occur in a single clause without cancelling out the negative sense. As early as in 1889, Brown (1889) discussed some dialectal features in Tennessee including double negation.⁷ He calls double negation an “error” but states that it “seems to be difficult to avoid, and one hears it among people of more than ordinary education” (p. 205). This area of research into negation continues up to the present day. See Martínez (2003: 477-483), who provides a brief summary of previous studies concerning the existence of multiple negation in Britain and the United States.

Another major aspect of negation often discussed in relation to dialects in Present-day English is the employment of *ain't*. Studies in this category are numerous: Anderwald (2002: 116-150) notes the dramatic spread of this form in British English, while Howe (2005: 176-188) gives a detailed discussion on the use of *ain't* in African American Vernacular English in the present day. Furthermore, Trudgill & Chambers (1991: 51) provide a neat summary on the use of *ain't* in English dialects in general. See also Biber, et al. (1999: 167-168) for *ain't* in Present-day English in general. Like Anderwald, they mention the widespread use of this non-standard form.

Multiple negation and the employment of *ain't* are, however, irrelevant to the data of the present analysis, since the language recorded in CSPAE is far too formal for them to occur, although it is a corpus of spoken English. Aspects of negation which are of relevance to the present study include the overall frequencies of negation itself, the contrast between so-called *not*-negation and *no*-negation (to be defined later), and possibly the occurrence of the contracted form *n't*. As for the overall frequencies of negation, it has often been pointed out in previous studies that negation is more frequent in spoken language than in written texts. Tottie (1981: 271), for instance, remarks: “negation was found to be twice as frequent in spoken English as in written

⁷ Other features discussed in Brown (1889) include double comparatives, the use of adjectives for adverbs, and infinitives with *for to*.

English, with 27.6 *vs.* 12.8 instances per 1,000 words”.⁸ This has been confirmed by Biber, et al. (1999: 159) in their corpus-based exploration: negation is the most frequent in conversation followed by fiction, news, and academic texts in this order. Biber, et al. propose some possible reasons for this, of which the following are relevant to the present study: conversations are inclined to include verbs like *forget*, *know*, *mind*, *remember*, *think*, *want*, and *worry*, which are likely to collocate with negation; and conversation is interactive and “invites both agreement and disagreement”, which according to them ultimately leads to the frequent occurring of negative forms. Although the present study investigates spoken data only, it is of interest to see if significant differences are found within spoken data depending upon different styles. The fact that the settings of Mathematics and Reading contain spontaneous interactions may be linked in a significant manner to the frequency of negation, since they are more “colloquial” in nature than the “spoken language” recorded in the other settings. In other words, the study by Biber, et al. (1999) based upon spoken and written English may be applicable to different styles of spoken English.

The second aspect of negation relevant to the present research is the contrast between *not*-negation and *no*-negation in contemporary English. The former is the type of negative clauses where the adverb *not* is employed side by side with indefinites (*a(n)*, *any*, *ever*, and *either*)⁹, while the latter is the type of negative clause with negative items like *no*, *no one*, *nothing*, *none*, *never*, *nowhere*, and *neither* (i.e. negative items where negation is incorporated). Examples of *not*-negation and *no*-negation include:

- (1) BAYNE: I *don't* want to see any journals cut in the library. (White House, 1995, male)
- (2) GOLAN: ... and it *doesn't* make any sense to me ... (Mathematics, July 1997,

⁸ The statistics here are based upon 50,000 words each of spoken and written British English extracted from the Survey of English Usage. This point is mentioned in various other works of hers. See, for example, Tottie (1982, 1991).

⁹ For an inventory of the indefinites, see Tottie (1988: 246) among others.

female)

- (3) DOSSEY: I asked John and Gail for it. I've *never* met her. (Mathematics, June 1997, male)
- (4) QUALLS: ... Now, I heard very clearly from Barb that NAGB has wrestled with this issue for seven years and has done *nothing* about it. (Reading, July 1997, female)

(1) and (2) illustrate *not*-negation, whereas (3) and (4) are examples of *no*-negation.

As Tottie (1988: 246) comments, a number of studies have discussed the contrast between *not*-negation and *no*-negation in English (e.g. Jespersen 1917, Poldauf 1964), but it is she who makes the most substantial survey of the two types of negation in contemporary English (see Tottie 1988, 1991, among others). More specifically, she highlights the more frequent occurrence of *not*-negation in spoken English than in written English. On the basis of her research into the London-Lund Corpus of Spoken British English (LLC) and the Lancaster-Oslo/Bergen Corpus (LOB), she remarks: “Colloquial, spoken English favours *not*-negation, while more ‘literary’ or formal written English favours *no*-negation” (Tottie 1988: 262). Again, the data in the present study is all spoken, but the present issue is still relevant, since the contrast between spoken and written English is essentially a matter of style and most probably comparable to different styles within the category of spoken English.

Finally, the present study investigates the occurrence of the contracted form *n't* in different styles of spoken English in CSPAE Gender. The likely assumption is that *n't* is more frequent in the language recorded in the meetings of Mathematics and Reading, which are located most distantly from the formal end on the scale of formality and are therefore the most “colloquial” in nature.¹⁰

4. Frequencies of negation in different settings of CSPAE Gender

4.1. Overall frequencies of negation in different settings of CSPAE Gender

¹⁰ For a detailed survey of negative contraction in the history of English, see Brainerd (1989).

As mentioned above, it has been noted in previous studies that the overall frequency of negation differs depending upon the style and that it is higher in spoken English than in written English. The present study investigates the frequency of negation in different styles of *spoken* English. The negative markers considered in the following discussion are: *not* (including the contracted form *n't*), *no* (including the response marker *no*), *none*, *nothing*, *nobody*, *nor*, *neither*, and *never*. Lexical forms with an incorporated negative morpheme like *nevertheless*, *non-nuclear*, and *impossible* (with a negative affix) are excluded from analysis. The table below shows the overall frequencies of negation in the four settings of CSPAE Gender:

Table 2. Overall frequencies of negation in different settings of CSPAE Gender (per 1,000 words)

White House		Faculty Meetings		Mathematics		Reading	
Male	Female	Male	Female	Male	Female	Male	Female
14.5	20.0	11.4	9.7	14.3	16.9	17.3	17.7

The occurrence of negation is relatively frequent in the White House, Mathematics, and Reading, while it is rather infrequent in Faculty Meetings. Gender differences are not particularly clear except in the White House, where female utterances include a markedly larger number of negative items than those of males.

Although the contrast between spoken and written English is not directly relevant to the spoken corpus under analysis, it is reasonable to surmise that the frequency of negation increases as utterances become less formal. It has often been noted in previous studies that spoken language at the formal end has some affinities to written language (e.g. Biber 1988: 36).¹¹ Indeed, our previous studies elucidate that the language in the White House, which is the most formal, is often the closest to written English, followed by the language of Faculty Meetings, that of Mathematics, and then Reading in this order. The result shown above in Table 2, however, does not necessarily conform to our

¹¹ Some other studies also discuss the continuity between spoken and written English, e.g. Chafe (1985) and Greenbaum & Nelson (1995: 16-17).

expectation. While the frequency of negation indeed rises from Faculty Meetings to Mathematics, and from Mathematics to Reading, it is fairly extensive in the White House, which is supposed to be the most formal of the four settings in CSPAE Gender. Especially noteworthy is the frequent occurring of negative items in the female utterances in the White House, which yield 20 negative items per 1,000 words. Further detailed analysis shows that the frequent occurrence of negation is particularly notable in WH94-5f, which provides 21.0 examples per 1,000 words. (The corresponding figure in WH96-7f is 14.5, which is still high when compared with Faculty Meetings.)

The fairly frequent attestation of negation in the White House is partly ascribable to the fact that negative responses as illustrated by the following examples are markedly more common in the White House than in the other settings:

- (5) MYERS: *No*. I think that's something that we've certainly followed very closely last year and continuing to evolve. (White House, 1994, female)
- (6) KIFER: *No*. I'm talking about this booklet now, and I think the booklet is your opportunity to say what you believe mathematics ought to be in grade eight. (Mathematics, July 1997, male)

Table 3 displays the frequencies of the response marker *no* per 1,000 words in the four different settings of CSPAE Gender:

Table 3. The occurrences of the response marker *no* in different settings of CSPAE Gender (per 1,000 words)

White House		Faculty Meetings		Mathematics		Reading	
Male	Female	Male	Female	Male	Female	Male	Female
1.3	2.5	0.1	0.4	0.7	1.1	1.6	0.9

This table clearly demonstrates the parallelism between the overall frequencies of negation and the frequencies of the response marker *no* in the four settings of CSPAE. The response marker *no* is markedly more frequent in the White House, and especially

in the female utterances of the White House, than in the other three settings, where it increases as language becomes less formal (from Faculty Meetings to Mathematics and possibly from Mathematics to Reading, although the difference between the last two is close to none). Here again, a fairly marked difference is observed between WH94-5f and WH96-7f, though this is not shown in the table. In WH94-5f, the frequency of the response marker *no* per 1,000 words reaches 2.7, whereas the corresponding figure in the latter is 1.3. Otherwise, gender differences are not prominent in the above table.

From the situation as observed in Table 3, it is evident that the more interactive the setting is, the more frequent the response marker *no* becomes. The settings of Mathematics and Reading are by nature highly interactive as they are characterized by spontaneous exchanges of opinions among the participants. Borrowing the concepts of exploratory and expository talk from Holmes (1992: 134-135), our previous studies have classified the settings of Mathematics and Reading as the former in that the participants in them are involved in conversation in order to develop ideas (e.g. Iyeiri, et al. 2005). By contrast, the language of the White House and Faculty Meetings is expository in nature as the aim of the utterances is mostly to convey facts and/or opinions. When viewed from the perspective of interactivity, however, the White House press conferences may in fact be highly interactive. The participants in the White House are constantly exchanging questions and answers, which yields a number of occasions where the response marker *no* can be used. It is true that the frequent occurrence of the response marker *no* is outstanding in WH94-5f, but even with this excluded, the response marker *no* is relatively common in the White House.¹²

By contrast, Faculty Meetings are far less interactive than the other settings. The participants in the Faculty Meetings do exchange opinions, but they tend to speak for a longer space of time once they take their turn. Consequently, the occasions where they

¹² See also Iyeiri, et al. (2011), who explore different words occurring in turn-initial position, reaching the conclusion that the use of the response marker *no* is a characteristic feature of the setting of the White House.

use the response marker *no* are restricted, at least in comparison to the other settings where turn-taking takes place much more frequently. All in all, factors other than formality are relevant to the frequent occurrence of negation, and the degree of interactivity is perhaps one of them, though its contribution to the overall frequency of negation should by no means be overestimated.

4.2. Some frequently occurring verbs

As shown in the previous section, the frequent occurring of the response marker *no* is certainly relevant to the overall frequency of negation. However, it occurs at the rate of 2.5 per 1,000 words at the maximum, accounting for only about 10 percent or so of negation. Another possible factor could be the type of verbs commonly employed in the four settings. As mentioned above, Biber, et al. (1999: 159) refer to the frequent occurrence of *forget*, *know*, *mind*, *remember*, *think*, *want*, and *worry*, which they consider are often negated, when they discuss the fact that negation is more frequent in conversation than in other types of English. Of the seven verbs in the list, *know*, *think*, and *want* are worth considering as they provide a fairly large number of examples in CSPAE Gender.¹³ The table below exhibits how frequently they are employed in the four settings of CSPAE Gender irrespective of whether they are in negation or not:¹⁴

Table 4. All occurrences of *know*, *think*, and *want* in CSPAE Gender (per 1,000 words)

	White House		Faculty Meetings		Mathematics		Reading	
	Male	Female	Male	Female	Male	Female	Male	Female
<i>know</i>	2.9	4.6	2.5	2.5	3.6	4.7	5.2	5.3
<i>think</i>	5.6	13.3	5.6	5.0	9.9	9.8	9.1	8.7
<i>want</i>	2.0	1.7	2.2	3.8	3.7	4.4	4.6	4.6

¹³ Although the other verbs may also be relevant, they are not commonly observed in CSPAE Gender. *Mind* is, for example, often observed in combination with *never* in the form *never mind*, but its occurrence is too infrequent to be suitable for further analysis.

¹⁴ As we are testing whether these verbs are liable to be linked to negation of any kind, we have counted all possible forms, including the infinitival and gerundial uses. However, we have excluded the cases where they are clearly nominal, e.g. *mathematical thinking*.

Some illustrative examples follow:

- (7) HOOKER: We don't *know* obviously the target date for that because we haven't completed the fund raising. (Faculty Meetings, 1996, male)
- (8) MYERS: Well, you guys enjoyed that a lot yesterday, so we're *thinking* of making that permanent venue for foreign leaders. No, it will be in the East Room. (White House, 1994, female)
- (9) MANDEL: And Eunice might *want* to say a little bit about what that is and what they are and how they came to be. (Reading, July 1997, male)

While the verb *think* is the most frequent of the three in all settings across the board, the three verbs share an inclination to be used more frequently in the exploratory talk of Mathematics and Reading than in the expository talk of the White House and the Faculty Meetings. This would explain in part the frequent occurrence of negation in Mathematics and Reading, if the verbs are indeed linked to negation as Biber, et al. state. As for the White House, the overall tendency seems to be more in conformity with Faculty Meetings except for *know* and *think* in the White House (female), which has often been exceptional in any case. Hence, these verbs themselves do not necessarily contribute to the relatively frequent occurrence of negation in the White House.

Further analysis, however, elucidates the relevance of the three verbs to the overall frequency of negation in the four settings. Indeed, they are not particularly common in the White House in general, but when they occur there, they are strongly inclined to be negated. See Table 5, which shows the proportions of *know*, *think*, and *want* observed in negation to the totals of their occurrences:¹⁵

¹⁵ The raw frequencies corresponding to this table are given in Appendix 1.

Table 5. The proportions of *know*, *think*, and *want* in negation in CSPAE Gender (%)

	White House		Faculty Meetings		Mathematics		Reading	
	Male	Female	Male	Female	Male	Female	Male	Female
<i>know</i>	32.5	40.5	19.5	18.2	20.6	25.2	23.6	22.9
<i>think</i>	8.0	10.6	3.9	4.8	6.7	5.3	7.8	7.3
<i>want</i>	14.8	18.5	10.4	7.3	12.3	14.0	14.1	14.4

The verb *know* is attested in negation at the ratio of 30 to 40 percent in the White House, which is distinctively higher than in the other settings, among which the meetings of Mathematics and Reading also present a relatively large proportion of negation for the same verb. Similar tendencies are attested with *think* and perhaps with *want*. To conclude, the occurrence of these verbs is linked, at least to some extent, to the overall frequency of negation in CSPAE Gender in that they are often negated in the White House, Mathematics, and Reading, where normalized frequencies of negation are also relatively high. Why they are negated most prominently in the White House is, however, an open question. *Know* and *think* in negation are often encountered with first-person subjects in the White House, as illustrated by the following examples:

- (10) MCCURRY: I *don't know* any of the details of that inquiry, and I refer you to the Service. (White House, 1997, male)
- (11) TALBOTT: Well, I honestly *do not think* that there is a misunderstanding on that score. (White House, 1997, male)

It is possible that these expressions are characteristic of political talk, though further research is certainly necessary to confirm this point.

4.3. An Additional comment

Aside from the response marker *no* and certain verbs like *know*, *think*, and *want*, there are other linguistic features possibly related to the overall frequencies of negation, of which we would like to single out the fairly fixed form *be plus sure*, which often occurs

in negation, as in:

(12) PETIT: *I'm not sure*. This is a draft I took off the web yesterday morning before I left. (Mathematics, July 1997, female)

(13) STRICKLAND: ... But *I'm not sure* that today is the – our purpose today would be to respond specifically to those questions. (Reading, June 1997, female)

Most examples of this expression are found with the first-person singular subject *I* (in the forms *I am not sure* and *I'm not sure*), but other subjects are also encountered. The entire corpus of CSPAE Gender yields 409 examples of “forms of *be plus sure*” in negation. Although this may sound a small number when compared with the total of negative items, which reaches 24,996, it still accounts for 1.6 percent of negation. Interestingly enough, this expression seems to be favoured by female speakers, at least more so than males. See the table below, which displays the normalized frequencies of *sure* used in this fixed form:

Table 6. Frequencies of “*be not sure*” in different settings of CSPAE Gender (per 1,000 words)

White House		Faculty Meetings		Mathematics		Reading	
Male	Female	Male	Female	Male	Female	Male	Female
0.13	0.46	0.13	0.29	0.27	0.25	0.18	0.37

As this table shows, female speakers use the expression at issue twice as frequently as male speakers or even more in each setting except in Mathematics, where no gender differences are observed. In view of the fact that the same content could have been expressed by other expressions like *I don't think*, the employment of “*be not sure*” is not necessarily bound by the content matter. In other words, this is a case where possible gender differences are witnessed. For the purpose of the present paper, it is worthy of note that the expression certainly contributes to the overall frequency of negation, but to a lesser extent than the response marker *no* and verbs like *know*, *think*,

and *want*, both discussed above. The normalized frequencies as shown in Table 6 are markedly lower than in the cases discussed in previous sections.

5. *Not*-negation or the employment of the negative adverb *not*

The second aspect of negation to be analyzed in the present paper is the frequency of negative sentences with *not*. The preliminary assumption will be that they are very common in CSPAE. We deduce this inference from what Tottie states about the contrast between *not*-negation (marked by *not* plus indefinites) and *no*-negation (marked by other negative items than *not*, e.g. *no*, *no one*, *nothing*, *none*, *never*, *nowhere*, *neither*, and *nor*) in Present-day English in general. As mentioned above, she concludes on the basis of her research that *not*-negation tends to be more frequent in spoken English than in written English. As the pairing of *not* and indefinites is not always possible in CSPAE, which is spoken and for this reason includes a number of fragmentary sentences, the present paper counts the proportion of the negative adverb *not* to the total of negative items. Although this is not equivalent to the ratio of *not*-negation, it should be comparable in a way to *not*-negation and therefore should be higher in spoken than in written data. It should also be conditioned in the same way as the ratio of *not*-negation by differences of formality, interactivity, etc. The table below shows the proportions of *not* to the totals of negative items in CSPAE Gender:¹⁶

Table 7. Proportions of *not* to the totals of negative items in CSPAE Gender (%)

White House		Faculty Meetings		Mathematics		Reading	
Male	Female	Male	Female	Male	Female	Male	Female
78.6	74.5	85.6	85.9	86.8	86.4	84.5	88.5

Table 7 reveals a fairly neat correlation between formality of spoken English and the employment of *not*: *not* is the least frequent at the most formal end, i.e. White House.

¹⁶ The raw frequencies corresponding to this table are given in Appendix 2.

Gender differences are virtually unavailable and also the interactivity as discussed in the previous section seems to be irrelevant. Furthermore, the differences among Faculty Meetings, Mathematics, and Reading are slight.

Thus, the above table largely confirms that the stylistic differences among the four different settings are correlated with the frequency of negation with *not*. Spoken English at the formal end, which is represented by the language used in the White House, is comparable in a way to written English. To gain a more accurate view on this, however, it is necessary to modify the data in a slight way. The totals of negative items used in Table 7 include the response marker *no*, which is a characteristic feature of the corpus under investigation. Since the response marker *no*, which is syntactically independent of neighbouring clauses, has nothing to do with *not*-negation or *no*-negation, it is appropriate to exclude it. The table below is now based upon the totals which do not include the response marker *no*:¹⁷

Table 8. Proportions of *not* to the totals of negative items (excluding the response marker *no*) in CSPAE Gender (%)

White House		Faculty Meetings		Mathematics		Reading	
Male	Female	Male	Female	Male	Female	Male	Female
86.3	85.0	86.5	89.2	91.6	92.5	92.9	93.4

The proportions of *not* to the totals of negative items (excluding the response marker *no*) are even higher in all four settings when compared with Table 7 above, illustrating again how frequent the negative adverb *not* is in spoken language in general. The proportions are constantly greater than 85 percent and even greater than 90 percent in the meetings of Mathematics and Reading, both of which are characterized by their exploratory talk. And, the negative correlation between the formality of spoken language and the employment of *not* (as opposed to *no*, *never*, etc.) is again observable. Unlike the case of Table 7, where the division was drawn between the White House at

¹⁷ The raw frequencies corresponding to this table are given in Appendix 3.

the formal end and the other settings, the boundary is now clearly visible between the group of the White House and the Faculty (both expository in nature) and the group of Mathematics and Reading (both exploratory in nature), in the latter of which the employment of *not* is even more frequent.¹⁸ The difference between the two groups is, however, fairly minor, and in any case the issue of expository and exploratory talk is ultimately correlated with the scale of formality (cf. Iyeiri, et al. 2005).

6. Negative contraction

As demonstrated in the previous section, the frequency of *not* (as opposed to the frequency of the other negative items) is relevant to different styles in CSPAE Gender. Although the language used in the four settings is all spoken, spoken features are likely to be most prominent in the meetings of Mathematics and Reading, where the language used is considered to be the least formal. By contrast, the language of the White House, which is at the formal end, is more prosaic in nature and comparable in some measure to written English, at least in comparison to the other settings.

This leads us to the conjecture that negative contraction in the form *n't* is the least frequent in the White House and that it increases in Faculty Meetings, Mathematics, and Reading in this order, since it is another feature often associated with spoken language.¹⁹ Table 9 exhibits the proportions of *n't* to the totals of the negative adverb *not* used in sentence negation.²⁰

¹⁸ This alteration was caused by the fact that the response marker *no* is markedly less frequent in the Faculty Meetings than in the other three settings in CSPAE. See also Table 3 above.

¹⁹ Contracted forms in general are more inclined to occur in spoken English than in written English. Apparently, this tendency has a long tradition in the history of English. See Huber (2007), who gives the statistics based upon the Old Bailey Corpus in late Modern English (1732-1834) and shows that negative contraction occurs at the ratio of 6.4% in spoken English and at the rate of 0.1% in written prose. (The statistics here are based upon negative sentences involving auxiliaries.)

²⁰ Examples like the following where *not* qualifies other constituents than the verb phrase are excluded from the totals, since *not* in this usage cannot be contracted: *Not to have it there at all*,

Table 9. Proportions of *n't* to the totals of *not* in CSPAE Gender (%)

White House		Faculty Meetings		Mathematics		Reading	
Male	Female	Male	Female	Male	Female	Male	Female
49.4	59.2	55.1	55.0	63.6	64.5	69.5	61.8

Some illustrative examples of contracted *n't* follow:

(14) PHILLIPS: ... Then if the authorization is approved, they would also be the policy board, which would be very similar to what they do with NAEP, where they *don't* just give advice, they also set policy. (Mathematics, August 1997, male)

(15) KAPINUS: I *wasn't* expecting that. (Reading, July 1997, female)

The scale of formality as represented by the four settings of CSPAE Gender is fairly well reflected in the frequency of *n't* as well. Although negative contraction is relatively frequent in all settings across the board as it takes place at the rate of around 50 percent or more, there is a notable gap between the group of the White House and Faculty Meetings and the group of Mathematics and Reading. In the latter, where the language is less formal, the occurrence of *n't* is notably more frequent. In the settings of the White House and Faculty Meetings, by contrast, *n't* is more infrequent and perhaps more so in the White House than in Faculty Meetings. The proportion of *n't* in the female utterances in the White House is as large as 59.2 percent, but this is to a large extent due to WH94-5f. The remaining data of female utterances in the White House yields the ratio of 43.1 percent. The behaviour of negation in WH94-5f is in many ways exceptional as the above discussion displays, which may be attributable to the idiosyncrasy of Ms Meyer or her interactive way to approach the audience. Her utterances represent a notably large portion of WH94-5f. This case excluded, it is safe to conclude that the scale of formality is correlated with the frequency of *n't* in that it increases as

I think would send a wrong message (Reading, June 1997, female, emphasis mine). For the raw frequencies on which the present table is based, see Appendix 4.

utterances become less formal. Furthermore, the notable gap between the group of the White House and Faculty Meetings on the one hand and the group of Mathematics and Reading on the other hand suggests that this is also a matter of expository and exploratory talk.

7. Additional discussion and conclusion

The above discussion has revealed that there is a fairly clear correlation between different styles in CSPAE Gender and behaviours of negation observed in them. Although the corpus includes only spoken English, different settings display different states of things. Overall, the more formal the language is, the less frequent the occurrence of negation is and the less frequent the occurrence of *not* is. Furthermore, the contracted form *n't* becomes less frequent. In addition to this, other features like interactivity, gender differences, and the contrast between expository and exploratory talk are presumably relevant. In the case of the overall frequency of negation, the White House, though formal in language, presents negative items fairly commonly, which may be due to the interactive nature of the setting. The overall frequency of negation is also related to some verbs like *know*, *think*, and *want*, and the fixed expression “be *not sure*”, the last of which is slightly more favoured by female speakers than males. Furthermore, the gap between the group of the White House and Faculty Meetings and the group of Mathematics and Reading is on occasion quite prominent, suggesting that the issue of expository and exploratory talk is also relevant. This was the case in the above discussion about the frequency of negation with *not* and the frequency of *n't*. Finally, the female utterances in the White House are separated into WH94-5f and WH96-7f in the present study, the former of which has shown many exceptional features. This may be due to Ms Meyer, who occupies a large portion of the file, in the sense that she approaches the audience in an interactive way.

To confirm all these features and to see the distance between different settings of

CSPAEG Gender in terms of negation, the present paper concludes the discussion with cluster analysis.²¹ The variables are correlated to the above discussion, namely the frequencies (per 1,000 words) of: (a) the full form *not* used in sentence negation; (b) the contracted form *n't*; (c) *not* qualifying a constituent; (d) *no* (other than the response marker), *none*, *nothing*, *nobody*; (e) negative connectives (i.e. *nor*, *neither*); (f) *never*; and (g) the response marker *no*.²² These variables are to cover the features discussed above, i.e. frequencies of negation, the employment of *not*, and negative contraction. The graph obtained from the analysis is given below:

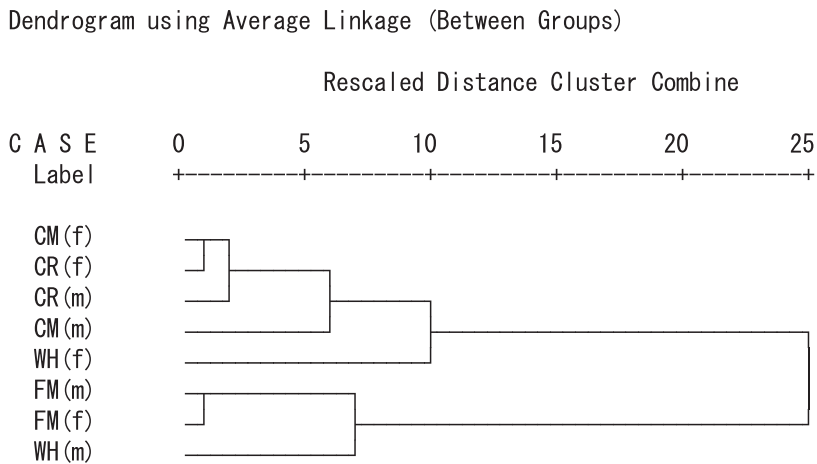


Figure 1. The relationship among the four settings in CSPAEG Gender

The clusters obtained indeed show that there is a fairly transparent correlation between the different settings and the behaviours of negation in CSPAEG Gender. First of all, the meetings of Mathematics and Reading may be grouped together, and here gender differences seem to be more prominent than the difference in the settings. Secondly, this group is quite separate from Faculty Meetings and the White House, although the female

²¹ We have conducted this analysis by utilizing SPSS. To measure distance between objects, we have selected the squared Euclidean distance from among the options provided by the package. This applies to Figures 1 and 2.

²² The input data set is given in Appendix 5.

utterances of the White House are at a distant level linked to the language of Mathematics and Reading, which may be ascribable to the rather exceptional features in WH94-5f as discussed above. To confirm these points, the following graph shows the result of the cluster analysis based upon the frequencies (again per 1,000 words) of the same variables in further divided settings as represented in Table 1:²³

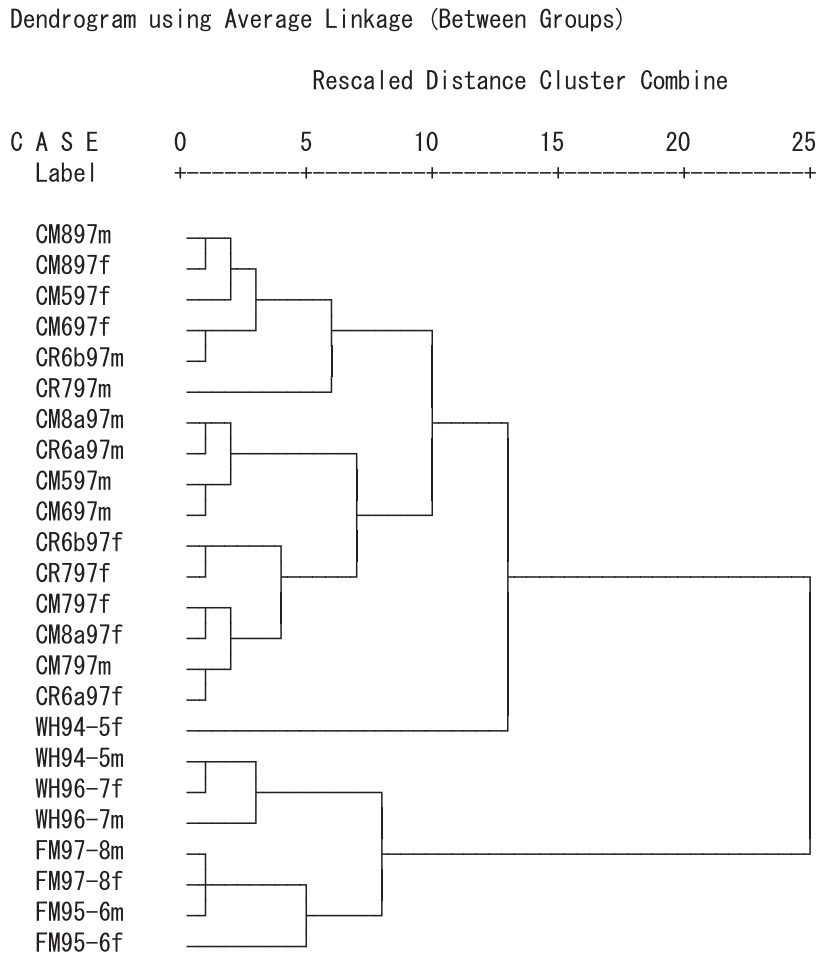


Figure 2. The relationship among different settings (further divided) in CSPAE Gender

While overall groupings are inclined to be the same between Figures 1 and 2, the latter shows a clearer view as to the distance among different settings. There seems to be a

²³ See Appendix 6 for the input data set.

fairly clear gap between the group of Mathematics and Reading and the group of the White House and Faculty Meetings, and in the latter group, the two settings are clearly demarcated. Furthermore, the exceptional behaviour in terms of negation in WH94-5f is shown in Figure 2 in that it is linked to the group of Mathematics and Reading, though at a fairly distant level. As for the group of Mathematics and Reading, female files tend to cluster with other female ones and male ones to males ones, but on the whole linguistic behaviours tend to be similar among different files within this group. All in all, it is safe to conclude that different styles of language observed in the different settings of CSPAE Gender are correlated to behaviours of negation in them.

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Appendix 1.

<i>know</i>	White House		Faculty Meetings		Mathematics		Reading	
	male	female	male	female	male	female	male	female
negated	418	305	50	25	254	188	98	326
totals	1286	754	257	137	1234	745	416	1422

<i>think</i>	White House		Faculty Meetings		Mathematics		Reading	
	male	female	male	female	male	female	male	female
negated	196	234	23	13	228	83	56	170
totals	2449	2206	585	272	3380	1567	722	2342

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<i>want</i>	White House		Faculty Meetings		Mathematics		Reading	
	male	female	male	female	male	female	male	female
negated	128	51	24	15	155	98	51	177
totals	864	275	231	206	1263	701	362	1225

Appendix 2.

	White House		Faculty Meetings		Mathematics		Reading	
	male	female	male	female	male	female	male	female
<i>not</i>	4975	2463	1008	456	4213	2324	1160	4194
totals	6329	3305	1178	531	4852	2689	1373	4739

Appendix 3.

	White House		Faculty Meetings		Mathematics		Reading	
	male	female	male	female	male	female	male	female
<i>not</i>	4975	2463	1008	456	4213	2324	1160	4194
totals	5768	2897	1165	511	4601	2512	1249	4492

Appendix 4.

	White House		Faculty Meetings		Mathematics		Reading	
	male	female	male	female	male	female	male	female
<i>n't</i>	2113	1293	467	210	2253	1291	689	2249
<i>not + n't</i>	4277	2183	848	382	3542	2001	992	3642

Appendix 5.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)
WH(m)	4.95	4.83	1.59	1.61	0.09	0.11	1.28
WH(f)	5.37	7.81	1.69	2.41	0.04	0.18	2.46
FM(m)	3.68	4.51	1.55	1.14	0.11	0.27	0.13
FM(f)	3.16	3.85	1.36	0.73	0.00	0.28	0.37
CM(m)	3.79	6.62	1.97	0.93	0.05	0.16	0.74
CM(f)	4.45	8.10	2.03	0.88	0.01	0.29	1.11
CR(m)	3.82	8.68	2.12	0.98	0.05	0.08	1.56
CR(f)	5.20	8.40	2.06	0.85	0.03	0.23	0.92

Frequencies per 1,000 words: (a) *not* (sentence negation); (b) *n't*; (c) *not* (constituent negation); (d) *no*, *none*, *nothing*, *nobody*; (e) *neither*, *nor*; (f) *never*; (g) *no* (response marker).

Appendix 6.

	(a)	(b)	(c)	(d)	(e)	(f)	(g)
WH94-5m	5.13	3.67	1.39	1.89	0.05	0.15	1.03
WH94-5f	5.35	8.47	1.74	2.51	0.03	0.18	2.68
WH96-7m	4.91	5.06	1.64	1.55	0.10	0.10	1.33
WH96-7f	5.53	4.20	1.41	1.84	0.08	0.16	1.25
FM95-6m	3.67	4.75	1.34	1.27	0.14	0.34	0.15
FM95-6f	2.56	3.58	1.05	0.54	0.00	0.20	0.54
FM97-8m	3.69	4.20	1.80	0.97	0.07	0.18	0.09
FM97-8f	4.25	4.36	1.92	1.09	0.00	0.42	0.05
CM597m	3.71	5.65	1.41	0.94	0.05	0.13	0.64
CM597f	3.71	9.04	2.60	1.04	0.00	0.33	0.85
CM697m	3.24	6.07	1.87	0.77	0.03	0.23	0.73
CM697f	3.41	9.52	1.79	0.79	0.00	0.38	1.20
CM797m	4.14	7.30	1.84	0.90	0.00	0.11	0.53
CM797f	5.25	6.93	2.33	0.58	0.00	0.26	0.78
CM897m	4.22	8.54	2.31	1.12	0.07	0.07	1.10
CM897f	4.32	8.45	2.40	1.22	0.03	0.27	1.51
CM8a97m	3.88	6.48	2.27	0.92	0.07	0.19	0.67
CM8a97f	5.14	7.08	1.68	0.75	0.00	0.26	0.95
CR6a97m	4.19	6.75	2.28	1.21	0.00	0.05	0.65
CR6a97f	4.63	7.85	2.06	0.73	0.04	0.27	0.74
CR6b97m	3.35	9.29	2.02	0.96	0.09	0.11	1.67
CR6b97f	5.28	8.79	1.99	0.73	0.02	0.24	0.83
CR797m	4.71	9.76	2.18	0.70	0.00	0.00	2.60
CR797f	5.56	8.46	2.13	1.04	0.04	0.20	1.14

Frequencies per 1,000 words: (a) *not* (sentence negation); (b) *n't*; (c) *not* (constituent negation); (d) *no*, *none*, *nothing*, *nobody*; (e) *neither*, *nor*; (f) *never*; (g) *no* (response marker).