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Pronouncing ‘‘the’’ as ‘‘thee’’ to signal problems in speaking

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Abstract

In spontaneous speaking, *the* is normally pronounced as *thuh*, with the reduced vowel schwa (rhyming with the first syllable of *about*). But it is sometimes pronounced as *thiy*, with a nonreduced vowel (rhyming with *see*). In a large corpus of spontaneous English conversation, speakers were found to use *thiy* to signal an immediate suspension of speech to deal with a problem in production. Fully 81% of the instances of *thiy* in the corpus were followed by a suspension of speech, whereas only 7% of a matched sample of *thuh*s were followed by such suspensions. The problems people dealt with after *thiy* were at many levels of production, including articulation, word retrieval, and choice of message, but most were in the following nominal.

Speakers face many problems in going from an intention to speech itself. They may have trouble organizing ideas, formulating syntax, selecting words, or pronouncing words. Many of these problems arise midutterance, and when speakers discover them, they may stop, discard words already spoken, add new words, or start their utterance over again. These problems are not the speakers' alone, because in pausing, adding and discarding words, and restarting, they can easily confuse their addressees (Fox Tree, 1995). Speakers have a battery of tactics for preventing such confusion, including the use of editing terms like *no*, *rather*, and *I mean* and the design of repairs (Levelt, 1983, 1989; Schegloff et al., 1977).

In this paper we investigate a special device for dealing with such problems, the pronunciation of *the* with a nonreduced vowel. In an utterance like ‘‘I handed a dollar to the bus conductor,’’ the words *a*, *to*, and *the* are usually pronounced with the reduced vowel schwa, the first vowel in *about*. We will represent these

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pronunciations as *uh*, *tuh*, and *thuh*. Yet when produced one at a time, or in citation form, or with contrastive stress, these same words are pronounced with nonreduced vowels, which we will write *ei*, *tuw*, and *thiy* (rhyming with *day*, *blue*, and *see*). These forms would be used, for example, in ''She's not *the* doctor in town, but just *a* doctor,'' or ''I saw her walking *from* the bank, not *to* it.'' Informally, we have observed that people in spontaneous conversation often use function words with nonreduced vowels to indicate trouble, as in this example (S.1.2.229):

(1) and when you come when you come to look at thiy . thuh literature, – I mean you know thuh actual statements

Here, the speaker produced *thiy*, paused, then produced *thuh literature* fluently; he apparently had problems choosing the word *literature* because he replaced it immediately with *actual statements* (''I mean you know thuh actual statements''). We will argue that *thiy* is regularly used to signal an immediate suspension of speech because of formulation problems.

To complicate matters, *the* has four pronunciations in British English, the source of our data. According to the Shorter Oxford English Dictionary (1973), it is pronounced ðĕ or ðə before consonants, and ð*i* before vowels. In the OED's system, these rhyme with the final vowels in *moment*, *action*, and *Psyche*, which are all reduced vowels in unstressed syllables.[1] The emphatic form of *the* is pronounced ð*ī*. In the OED's system, this rhymes with *see*, which has a nonreduced vowel. Acoustically, there is a clear difference between reduced ð*i* and nonreduced ð*ī*. First, ð*i* occurs only before vowels, whereas ð*ī* occurs before both consonants and vowels. Second, the intonation of ð*i* is assimilated to the following word, whereas the intonation on ð*ī* is characteristically flat and prolonged. To keep these forms straight, we will use three denotations: THE for the lexical item *the*; THUH for any *the* with a reduced vowel; and THIY for *the* with a nonreduced vowel.

Problems in formulation often lead to speech disruptions. In general, speech disruptions have three identifiable parts: (a) a *suspension* of fluent speech; (b) a *hiatus*, which may contain a pause, filler (*uh* or *um*), editing term, or nothing; and (c) a *resumption* of fluent speech (Clark, 1996). We will denote the point of suspension by ''{'' and the point of resumption by ''}'' as here:

(2) and when you come {} when you come to look at thiy {.} thuh literature, {– I mean you know} thuh actual statements

The first suspension is followed by an empty hiatus, which is followed by a resumption repeating the prior phrase. The third suspension is followed by a hiatus containing a pause (''–'') and two editing expressions (''I mean you know''), and that is followed by a resumption replacing the prior phrase. It is the second

[1] Some American dialects pronounce the as ðə before both consonants and vowels (Keating et al., 1994).

suspension we are interested in. The hypothesis is that speakers signal a suspension immediately after *the* by their choice of THIY over THUH.

If speakers use THIY as a signal of immediate problems in production, noun phrases that begin with THIY should have different properties from those beginning with THUH:

1. Speakers should suspend their speech far more often immediately after THIY than after THUH.
2. In the hiatus after that suspension, speakers should produce a variety of pauses, fillers (such as *uh* and *um*), and editing expressions (such as *I mean* and *you know*).
3. When speakers resume speaking after a hiatus following THIY, they should give evidence of having had problems with formulation. They should repeat the article THE more often after THIY than after THUH. They should make repairs and fresh starts more often after THIY than after THUH. They should leave their noun phrase incomplete more often after THIY than after THUH. And they should show they are uncertain about their choice of nominal, as in Example 1.

Our goal was to examine these and other related predictions.

1. Method

To compare THIY and THUH, we (a) identified every instance of THIY in a large corpus of spontaneous conversations, (b) created a matched sample of instances of THUH, and (c) checked for differences between the two samples.

As data we used the transcripts of 50 face-to-face conversations (numbered S.1.1 through S.3.6) from Svartvik and Quirk's (1980) corpus of English conversation, the so-called London–Lund Corpus (hereafter the LLC). These transcripts totaled about 170,000 words, or 850 pages in Svartvik and Quirk (1980). The conversations were audio recorded between 1961 and 1976 among adult British men and women of various ages in two- to six-person settings. Although some of the speakers knew they were being recorded, most didn't, and we included only those who didn't. The transcripts coded not only words, but also word fragments, pauses, tone units (phrases spoken under a single prosodic contour), overlapping speech, stress, and prosodic information such as rising, flat, and falling intonation. We worked entirely from a computerized version of the transcript because the original recordings were unavailable. See Svartvik and Quirk (1980) for details.

We selected 922 noun phrases (NPs) from these conversations for analysis: 461 of them contained one or more THIYs, and a matched set of 461 contained one or more THUHs and no THIYs. We will call the first set THIY NPs, and the second set, THUH NPs. THIY came in two forms, with and without an elongated vowel. When we separate the two pronunciations, we will write them *thi:y* and *thiy*; and when we combine them, we will write THIY. The 461 THIY NPs contained every *thiy* and

thi:y in the corpus (188 *thiy*s and 345 *thi:y*s). For each THIY NP, we chose a matching THUH NP from the next tone unit containing THUH spoken by the same speaker; if there was no such tone unit, we chose a THUH NP from the preceding tone unit. If there was more than one THUH NP in any tone unit, we chose one of the NPs at random. THUH occurred about 14 times as often as THIY in this corpus. With this method of matching THUH NPs, we were assured of getting THIY and THUH NPs from equally disfluent periods of talk from equally disfluent speakers. As we document later, this creates a slight bias that works against our hypotheses.

Because so many of the NPs contained repairs, repeats, and other nonfluencies, we defined each NP according to the target NP that was expressed once all the repeats and repairs had been accounted for. Consider the NP that begins with *thi:y* in this utterance (S.1.14.303):

(3) the way thi:y {.} little tr {} chintz kuh {} the little {} little {} little {you know} transparent curtains were fluffing

The target NP is *the little transparent curtains*, so the THIY NP is this:

(4) thi:y {.} little tr {} chintz kuh {} the little {} little {} little {you know} transparent curtains

It is this NP, with all its disfluencies, that constituted our basic unit of analysis.

In quoting utterances from the LLC, we will use a simplified notation that retains the features illustrated in this example (S.1.1.234–S.1.1.242):

(5) A: u:m you're very kind old Sam, – bless you, well that finishes that, . u:m. now what was the other thing I wanted to ask you, . i is . is it this year, that u:h Nightingale goes, – –
B: u:h no next year, – –
A: u:m . sixty f *–* four sixty-five, .
B: *sixty-five*

This example contains five special symbols: end of tone unit (,); ''brief pause (of one light foot)'' (.); ''unit pause (of one stress unit)'' (–); elongated vowels (:); and overlapping speech (*). We will identify each example we cite by the conversation (e.g., S.1.1) and tone unit (e.g., 234) of the example as ''(S.1.1.234).''

The LLC coded THE as ''the,'' ''ði,'' and ''ði:.'' Evidence internal to the corpus shows that ''the'' represents THE pronounced with a reduced vowel, our THUH, whereas ''ði'' and ''ði:'' represent THE with a nonreduced vowel (our *thiy* and *thi:y*), and not the OED's ð*i* that precedes vowels. The evidence is this: When we were able to identify the first word following THIY in THIY NPs, it began with a consonant 90.1% of the time and with a vowel 9.9% of the time. We were able to identify such a word only 57% of the time because the rest of the time THIY was followed by an incomplete NP, a fresh start, another THIY, or a THUH. In

comparison, the percentages of consonants and vowels following THUH in THUH NPs were 79.6% and 20.4%. That is, THIY was followed by a consonant even more often than THUH was, though it isn't clear why. Perhaps difficult (i.e., rare) words begin with consonants more often than common words, and THIY is more likely before difficult words. So we will use *thiy* and *thi:y* for the LLC's ''ði'' and ''ði:'' and THUH for the LLC's ''the.''

Grammarians have long noted that speakers use THIY for THE in contrastive contexts, as in ''She's not *the* doctor in town, but just *a* doctor,'' hence the OED's characterization of ðɪ̄ as ''emphatic.'' Remarkably, there was only one such use in the LLC, the second THIY in this utterance (2.3.393): ''from the time of thi:y – u:h – Franco-Prussian war, until about nineteen twenty, railways, were thi:y thing, in st in in in armies.'' The first THIY was not contrastive, nor were the others in the corpus.

2. Results

Speech was immediately suspended 81% of the time after THIY, but only 7% of the time after THUH, a ratio of 12 to 1 ($\chi^2 = 505.51,\ p < .001$). The rate of suspensions was roughly the same after *thiy* as after *thi:y*, 78% to 80% ($\chi^2 = .14$, $p > .5$; NPs containing both *thiy* and *thi:y* were not included in this analysis). These data strongly support the hypothesis that THIY signals an immediate suspension of speech. But why did speakers suspend their speech after THIY? We will examine (a) pauses, fillers, and editing expressions just before THIY and THUH; (b) pauses, fillers, and editing expressions just after THIY and THUH; and (c) the forms of repeats and repairs in the THIY and THUH NPs.

2.1. Pauses, fillers, and editing expressions

If THIY is a sign of problems, speakers may have produced disfluencies even before getting to THIY. The data on pauses and fillers preceding THIY and THUH are shown in Table 1. There were over twice as many pauses just before THIY as before THUH, 13% to 5% ($\chi^2 = 17.75,\ p < .001$). Fillers often occurred along with pauses. When pauses and fillers are taken together, one or the other or both occurred just before THIY 18% of the time, but before THUH only 8% of the time ($\chi^2 = 17.84,\ p < .001$). In addition, 12 THIYs were preceded by editing expressions (''I mean thiy''), compared to 6 THUHs, though this difference was not significant ($\chi^2 = .68,\ p > .5$).

Table 1
Percentage of pauses and fillers immediately preceding THIY and THUH

	Only pauses	Only fillers	Both pauses and fillers	Total
THIY	13.2	1.1	3.3	17.6
THUH	5.2	0.4	2.6	8.2

Table 2
Percentage of pauses and fillers immediately following THIY and THUH

	Only pauses	Only fillers	Both pauses and fillers	Total
THIY	33.6	9.3	14.5	57.5
THUH	2.6	0.4	0	3

If THIY signals a suspension in speaking, there ought to be even more pauses and fillers just after THIY, and there were. Table 2 lists the percentages of THIY and THUH followed by these elements. Pauses were more frequent after THIY than after THUH, 34% to 3% ($\chi^2 = 149.53,\ p < .001$). So were fillers, 9% to 0% (the 0% represents two cases; $\chi^2 = 39.28,\ p < .001$). One or the other or both occurred after THIY 58% of the time, but after THUH only 3% of the time ($\chi^2 = 323.79,\ p < .001$).

Editing expressions like *I mean*, *you know*, and *well* are common in the LLC (Erman, 1987), so they should also be common in THIY NPs. Indeed, they occurred in 5% of the THIY NPs, but in only 1% of the THUH NPs ($\chi^2 = 8.58,\ p < .01$). If THIY signals problems in formulating the next nominal, we should also find hedges like *sort of* before the following nominal, as in ''one of thi:y u:h . sort of . teenage louts'' (S.2.13.371). Hedges appeared in 2% of the THIY NPs, but in less than 1% of the THUH NPs ($\chi^2 = 5.49,\ p < .05$).

2.2. Repairs

THIY was strongly associated with repairs. Under the broad term repair, we include the categories listed in Table 3. Repairs were found in 51% of the THIY NPs, but in only 6% of the THUH NPs, a ratio of 9 to 1 ($\chi^2 = 232.18,\ p < .001$). As Table 4 shows, in each category of repair, there were more repairs in THIY NPs than in THUH NPs. The differences were largest for repetitions ($\chi^2 = 128.16$, $p < .001$) and fresh starts ($\chi^2 = 50.87,\ p < .001$), but they were still highly significant for replacements ($\chi^2 = 7.36,\ p < .01$) and interruptions ($\chi^2 = 13.49$, $p < .001$). Only for dropped determiners did the difference fail to reach significance ($\chi^2 = 1.43,\ p > .20$).

In all but one of the repetitions, speakers repeated THIY as either THIY or THUH. The data are summarized in Table 5. In the THIY NPs, the determiner was repeated on its own 22% of the time, with or without intervening fillers or editing expressions. The determiner was repeated as part of a retracing (e.g., ''that's thiy

Table 3
Five types of repair

Type of repair	Example
Repetition	rather than with thiy . thiy . thiy vice-presbyter
Replacement	it's thi:y . the monastery, – you know the very Gothic monastery
Fresh start	well thiy hadn't you told him that that I'd suspected as much
Dropped determiner	same committee as thi:y um – Dave Cole is on
Interruption	people who are doing thi:y uh [B: well what you do]

Table 4
Percentage of THIYs and THUHs followed by each repair type

Type of repair	THIY	THUH
Repetition	28.4	1.7
Replacement	3.5	.9
Fresh start	12.1	.7
Dropped determiner	3.5	2.2
Interruption	3.5	.2
Total	51	5.7

that's thiy'') another 7% of the time. Altogether, THE in its various forms was repeated 34% of the time in THIY NPs, but only 2% of the time in THUH NPs, a ratio of 17 to 1 ($\chi^2 = 152.35,\ p < .001$).

If THIY signals an impending problem, speakers should produce THIY before the disfluency, but then produce THUH as part of the fluent target NP, as here: ''you've got thi:y . the ghost thing'' (S.1.4.319). Of the 166 cases with repeated determiners, 63 contained only one form of THE (52 with THIY and 11 with THUH) and 103 contained both forms. Of these 103, 89 consisted of one or more THIYs followed by one or more THUHs, and only 7 consisted of the reverse, a 12 to 1 ratio ($\chi^2 = 70.04,\ p < .001$). There were also seven mixed cases (e.g., ''THIY THUH THIY''). The overwhelming pattern, then, was for THIY to be repeated as THUH.

A speaker's choice of THIY over THUH appears to be independent of the choice of where to start a repair. Of the repeated sequences containing both THIY and THUH, 15 of the 89 sequences in which THIY was followed by THUH retraced one or more words (e.g., ''at THIY at THUH''). This is 17%. Similarly, 10 of the 52 THIY followed by THIY sequences took the same form (e.g., ''at THIY at THIY''). This is 19%. So although THIY was followed by THUH almost twice as often as by THIY, about the same percentage were part of retracings ($\chi^2 = .127,\ p > .70$).

Having chosen THIY, speakers have an additional choice of *thiy* vs. *thi:y*, the short and elongated pronunciations of THIY, and these too contrast. Table 6 shows the percentages of *thiy* and *thi:y* preceded or followed by pauses, fillers, or both (the 38 NPs containing both *thiy* and *thi:y* are not included in the following

Table 5
Percentage of repetitions of THIY and THUH in THIY NPs and THUH NPs

Type of repetition	THIY NPs	THUH NPs
No repetitions	65.3	97.6
THIY THIY, or THUH THUH	9.8	1.7
THIY THIY THIY +, or THUH THUH THUH +	1.5	.7
THIY THUH	15.6	–
THUH THIY	1.1	–
THIY followed by any number of THUHs	3.7	–
THUH followed by any number of THIYs	.4	–
Other combinations, e.g. THIY THUH THIY	1.5	–
THE not repeated, or untranscribable	1.1	0
Total	100	100

Table 6
Percentage of pauses and fillers preceding and following *thiy* and *thi:y*

	Preceding	Following
thiy	20.3	44.7
thi:y	16	65.7

analyses, leaving 123 *thiy* NPs and 300 *thi:y* NPs). There is a striking difference between the two versions of THIY. There were about the same percentage of pauses and fillers before *thi:y* as before *thiy*, 16% to 20% ($\chi^2 = 1.14,\ p > .3$), but many more pauses and fillers after *thi:y* than after *thiy*, 66% to 45% ($\chi^2 = 15.90,\ p < .001$). In contrast, there were reliably more repairs in *thiy* NPs than in *thi:y* NPs, 55% to 43% ($\chi^2 = 4.35,\ p < .05$). So speakers are more likely to pause after *thi:y*, but to repair after *thiy*.

2.3. Choice of suspension

When speakers plan to suspend their speech after THE, they can pronounce the article as either THIY or THUH. Which should they choose? If THIY is a signal for problems, speakers should prefer THIY to THUH before suspensions. Indeed, their preference should be stronger the more serious the problem they expect.

To test this prediction, we scanned the LLC for every suspension after THE, amassing a total of 371 THIY NPs and 236 THUH NPs. These 236 THUH NPs represent about 4% of all THUH NPs in the corpus, whereas there were suspensions in 7% of our matched sample of THUH NPs. That is, our matched sample represents relatively disfluent periods of talk from disfluent speakers. The 4% figure is therefore more representative, strengthening our argument that THIY, with its 81% suspensions, is used as a signal for upcoming production problems. We classified all 607 NPs with suspensions by what occurred immediately after the suspension: (a) pauses only, (b) fillers only, (c) pauses and fillers, (d) repeats, (e) replacements, (f) fresh starts, (g) dropped determiners, and (h) interruptions by self or other. Table 7 shows the percentages of THIY NPs and THUH NPs followed by each of these eight categories.

Table 7
Percentage of suspended THIYs and THUHs followed by each suspension type

Type of suspension	THIY	THUH
Pauses only	24	33.5
Fillers only	5.9	.9
Pauses and fillers	6.7	.4
Repetition	35.3	36
Replacement	4.3	9.3
Fresh start	15.1	7.6
Dropped determiner	4.3	6.4
Interruption	4.3	5.9
Total	100	100

Speakers preferred THIY to THUH before suspensions. The ratio was 61% to 39% ($\chi^2 = 31.59,\ p < .001$). But according to our proposal, the preference for THIY over THUH should be greater the larger the problem speakers anticipate. Let us assume that a filler or editing expression (with or without pause) is evidence of a deeper planning problem than is a pause alone (Smith and Clark, 1993). If so, speakers should choose THIY more often before a filler or editing expression than before a pause alone, and they did, 94% to 53% ($\chi^2 = 27.64,\ p < .001$). Likewise, let us assume that repeating THE with a filler before the second token of THE is evidence of a more serious problem than is repeating THE without a filler. If so, speakers should choose THIY more often before a filled repeat than an unfilled repeat, and they did, 82% to 55% ($\chi^2 = 7.64,\ p < .01$). Finally, let us assume that a fresh start, in which the speaker takes the utterance in a new direction, is evidence of a more serious problem than is a replacement, in which the speaker preserves most of the syntax and semantics of what is being repaired. If so, speakers should choose THIY more often before fresh starts than before replacements, and they did, 76% to 42% ($\chi^2 = 12.33,\ p < .001$).

So when speakers suspend their speech after THE they aren't required to use THIY. They have a choice between THIY and THUH. What these data show is that they tend to choose THIY when they anticipate a major problem and THUH when they don't.

2.4. Formulation problems

Speakers in the LLC often revealed why they were suspending their speech after THIY. The most common cause was to deal with the immediately following nominal – the head noun of the NP plus its modifiers. These problems came in several forms. Occasionally, speakers had difficulties in simply pronouncing the nominal, as with the word *approach* in (6):

(6) yes, I uh I think that's uh tha that's the pru:h po uh thi:y uh – – that's the approach I think, very definitely (S.1.1.736)

More often, they had trouble thinking of the right word, as in (7) through (9):

(7) looking out towards thi:y u:m what's the name (S.3.4.368)
(8) that he spent two years as director of thi:y laeng uh what do you call it, thi:y you know, the thing that Arthur Delaney . started, in Kuwait (S.1.2.1073)
(9) a . place, – – u:m friendly to thi:y – friendly to the handicapped (S.2.14.330)

These all appear to reflect temporary failures in word retrieval.

Many times, the problem was not with the noun itself, but with a modifier, as in (10) through (12):

(10) and uh thi:y . different thiy important thing about them is, you don't notice how they're getting scratched (S.2.5.1075)

(11) in the way thi:y . little tr chintz kuh the little little little you know, transparent curtains were fluffing (S.1.14.303)
(12) they only know about thi:y . practical, . excuse me experimental aspects, of reading (S.2.4.736)

There are even examples where the problem is in the modifier after the noun:

(13) u:m – – – but that if he were given, . u:m . thiy the status of lecturer uh t t uh recognized teacher in linguistics (S.1.2.1038)
(14) under thi:y . wing where . geography has its big – . it smelled of mice, . and we got the noises from the animals in zoology (S.3.4.824)

In (13), the speaker suspended his speech before *the status*, already anticipating, apparently, his problem in choosing among *lecturer*, *teacher*, and *recognized teacher*. In (14), the speaker suspended his speech several times, anticipating what seems to be a problem in deciding how to identify which wing he meant, resorting in the end to a description of the wing itself.

In many of the examples so far, speakers were still deciding on what they wanted to say – the precise content of their messages. The point is more clearly reflected in (15) through (17):

(15) I . uh I think he casts uv – um – a very dark look at thi:y uh, – – – thi:y uh . let's say the Californian . fruit growers, and their – – oppressive attitude (S.3.5.704)
(16) I would find thi:y um – the colour, not the theme so much, but the colour (S.1.8.496)
(17) what's what's thi:y . what are the main points that the ghost makes in that speech now (S.3.5.429)

Example (17) most clearly shows that the speaker said THIY before having planned the utterance, because the final product required that the verb be changed from singular (''what's'') to plural (''what are''). Other evidence that speakers were still planning speech by the time they said THIY is found in examples (18) through (21), where speakers weren't happy with the wording they ended up using:

(18) A: quite a k thick creamy sort of scum of yeast, on thi:y u:m it was dried, you know, .
B: on the floor, .
A: on the? on thi:y well on thiy s you know on thiy hatchway there (S.1.7.1107)
(19) and u:m this time spoke to thi:y . manager's wife, who was sort of co-manager (S.1.3.186)
(20) and THIY . and THIY . BBC . choir or something they had (S.1.11.392)
(21) it's thi:y . the monastery, – you know the very Gothic monastery, with all

thi:y – wedding-cake, – – i it's a special kind of Gothic architecture, which is even more decorated than Decorated (S.2.13.665)

Hedges like *sort of* and *or something* suggest that speakers were hesitating because they were looking for a better way to express what they wanted to say.

Yet, on other occasions, speakers suspended their speech after THIY and then repaired a constituent that contained the THIY NP itself, as in (22) through (25):

(22) thiy this phonology I'm doing (S.1.6.1027)
(23) u:m and thi:y tr any truncation, . u:h would come somewhere in the middle (S.3.2.778)
(24) he borrowed them from thi:y . oh you know chose them, from the Porn, and had them all carried over (S.1.8.144)
(25) and thiy . and thiy . BBC . choir or something they had, – – for thi:y – – singing the Mendelssohn stuff (S.1.11.393)

In (22) and (23), THIY was replaced by *this* and by *any* – new articles altogether. In (24), the verb phrase ''borrowed them from thi:y [Porn]'' was replaced by ''chose them, from the Porn.'' In (25), ''thi:y [Mendelssohn stuff]'' was replaced by ''singing the Mendelssohn stuff.''

Examples (6) through (25) show that when speakers suspend their speech after THIY, they may deal with problems at many different levels: pronunciation, word retrieval, choice of words, and choice of message. Most of the time they deal with problems in the immediately following nominal, but they can deal with other problems as well.

3. Discussion

In spontaneous talk, speakers try to get their addressees to identify their utterances as efficiently as possible. The ideal way, ordinarily, is by speaking fluently, but speakers inevitably run into production problems that they and their addressees have to resolve. At one extreme, speakers can notice and correct a problem even before it becomes audible to their addressees. At the other extreme, speakers can fail to notice a problem, correcting it later only at the prompting of their addressees (Schegloff et al., 1977). There are many tactics between the extremes. In this paper we have examined one of them.

According to our proposal, speakers choose THIY over THUH to signal the likely suspension of speech immediately after THE to deal with a problem of production. About 20% of the time, speakers continue after THIY without further disruption, apparently able to repair the problem in time. But about 80% of the time they deal with the problem by pausing, repeating the article, repairing what they were about to say, or abandoning their original plans altogether. We will consider evidence for four claims:

1. THIY is associated with the suspension of speech to deal with production problems.
2. THIY is associated with suspensions that have been planned in advance.
3. In suspending their speech after THE, speakers have a choice between THIY and THUH, and they choose THIY when they anticipate that the problem is major.
4. THIY is a signal and not merely a symptom.

3.1. Suspension of speaking

There is much evidence that THIY is associated with the immediate suspension of speech to deal with an unspecified problem. Every speech disruption consists of (a) a suspension of fluent speech (the expected normal continuation of the current phrase), (b) a hiatus (which may be null), and (c) a resumption of fluent speech. In our corpus, speech was suspended after THIY 81% of the time, whereas it was suspended after THUH only 7% of the time, a ratio of 12 to 1. The hiatuses contained elements that also showed that speakers were trying to deal with a problem. The hiatuses after THIY contained a pause, filler, hedge, or editing expression 58% of the time, whereas there was one of these after THUH only 3% of the time. The resumptions after THIY also showed that speakers were dealing with production problems. Many of them contained repetitions of the article THE as either THIY or THUH, and many were repairs. A surprising number of speakers ended up abandoning the NP altogether (19%). This rarely occurred with NPs that began with THUH (3%).

There is also evidence that THIY is associated with not-so-immediate suspensions of speech. While 18% of THIY NPs contained some sort of suspension later in the same tone unit, only 9% of THUH NPs did ($\chi^2 = 17.59$, $p < .001$). When we exclude uncompleted NPs because they contain little or no material after the determiner, the difference is even greater: 22% to 9%.

THIY is clearly prospective, not retrospective, in the repairs it signals. Although it was preceded by pauses, fillers, hedges, or editing expressions 20% of the time, it was followed by them 58% of the time. The percentages for THUH were 9% and 3%. If THIY is a signal of repairs to come, it isn't surprising that it is also associated with repairs in the recent past. Problems often come in bunches, so speakers are likely to be disfluent at many points in any single utterance. Still, the suspension of speech immediately after THIY was more systematic than the disfluencies before it, evidence that THIY is a signal of repairs to come.

If THIY is a signal of prospective repairs, most repairs should be of the following nominal, the head of the NP, and they were. These repairs dealt with pronunciation, word retrieval, and choice of nominal. Yet there were also repairs of larger units that included the NP. So THIY signals the suspension of speaking in order to deal with an unspecified problem. It does not signal the type of problem, even if most problems have to do with the following nominal.

3.2. Monitoring for problems

One of the most influential hypotheses about the suspension of speech is

Levelt's (Levelt, 1983, 1989) *main interruption rule*: ''Stop the flow of speech immediately upon detecting trouble.'' The rule is important not because it always holds, but because it sets a norm for describing cases where it doesn't hold. As Levelt noted, for example, the rule doesn't hold when speakers interrupt themselves to repair a word that is inappropriate rather than incorrect. The rule also doesn't hold for some mid-utterance repairs. In a study by Blackmer and Mitton (1991), callers to a radio talk show initiated repairs much too quickly to fit the main interruption rule. One caller said ''The Lord says that and eventually you'll have to re-{} answer to him'' (adapted from p. 188). He apparently began to say *respond*, suspended speaking midword, and instantaneously produced *answer* to replace it. The hiatus was 0 ms long, which is too little time for him to have stopped the flow of speech, formulated a replacement, and begun articulating that replacement. He must have detected the problem earlier and continued speaking until he had the repair formulated and ready to initiate. Let us call these *instantaneous repairs*.

THIY represents quite a different departure from the main interruption rule. According to our findings, speakers suspend their speech after THIY to deal with a problem. To do this, they must formulate THIY in place of THUH at least 250 ms, say, before suspending their speech. So what speakers plan is more than simply ''stopping the flow of speech.'' They plan to ''stop the flow of speech after THE and mark the stoppage with THIY.''

THIY-suspensions and instantaneous repairs are therefore alike in some ways and different in others. Both are *delayed suspensions*; speakers detect a problem at some interval before suspending their speech. Both allow speakers to continue speaking while formulating a method for dealing with the problem. That is, both lead to continued fluency despite the problem. Yet with THIY suspensions, speakers plan to suspend their speech at a particular point in their utterance, after THE, whereas with instantaneous repairs, they suspend their speech according to other criteria – perhaps when they have run out of formulated words, or when they have formulated their repair, or both. With THIY, speakers plan the particular point of suspension in advance, whereas with instantaneous repairs, they appear not to.

3.3. Choice of THIY vs. THUH

When speakers suspend their speech after THE, they can select either THIY or THUH. In our sample, they selected THIY about 60% of the time and THUH about 40% of the time. They chose THIY when they anticipated a major problem and THUH when they didn't.

How does THE come to be pronounced THIY and THUH? One possible account is based on a unit of pronunciation called the *phonological phrase* (Nespor and Vogel, 1986; Selkirk, 1980). According to this account, speakers have options about where to complete phonological phrases (see Levelt, 1989). They prefer to complete them at the ends of sentences, major phrases, and content words (nouns, verbs, adjectives, adverbs). They prefer *not* to complete them at function words such as THE, although they can. Now, the last word of every phonological phrase must be a phonological word. In English, if that word has only one syllable, it

must end in a vowel plus consonant (e.g., *hat* or *dog*) or a diphthong (*high* or *day*). It cannot end in a reduced vowel (Ito, 1991; McCarthy and Prince, 1990). That is, phonological phrases can end with THIY but not with THUH.

Suppose that speakers normally design phonological phrases that are completed at the ends of NPs or beyond. If they suddenly decide to suspend their speech after THE, they will pronounce the word as THUH. However, if they anticipate a major problem in producing an NP, they can design a phonological phrase that is completed at THE, giving themselves more time to deal with the problem. When they take this option, they must pronounce THE as THIY because it is the last word of a phonological phrase. In this account, the choice between THIY and THUH is a consequence of a choice between completing a phonological phrase at THE and completing it later. But because completing a phonological phrase at THE is highly dispreferred, abnormal, nonstandard, or marked, speakers need a good reason for doing so. According to our data, they choose that option precisely when they anticipate a major problem after THE. If they discover a problem after they have planned the NP as a phonological phrase, they will say THUH; but if they discover a problem before that, they can plan the phonological phrase that ends at THE and say THIY.

Much of this argument holds even without the notion of phonological phrase. THUH is the normal pronunciation of THE, and THIY is the abnormal or marked pronunciation. So speakers need a special process in order (a) to recognize that they will be suspending their speech after THE and (b) to formulate the pronunciation of THE not as they ordinarily would, but as the marked THIY. Speakers need no such process to suspend their speech after THE and pronounce it as they ordinarily would. Speakers must have a good reason for going to the extra work required by THIY, and they do: they anticipate dealing with a major problem after THE.

3.4. THIY as a signal

In the use of language, there is a distinction between signals and symptoms (what Grice, 1957, 1968, called nonnatural and natural meaning). A signal is an act by which a speaker means something for his or her addressees, whereas a symptom is a natural sign without an intervening intention. To use Grice's (1957) examples, ''Those spots (on the body) mean measles'' is a statement about a symptom, whereas ''Those three rings of the bell (on the bus) mean that the bus is full'' is a statement about a signal. Many elements of utterances are signals. When a speaker asserts ''I'm hungry,'' the entire utterance is a signal, and so, also, are many of its parts – *I*, *hungry*, the present tense, and the height of the intonation contour on *hungry*. The essential criterion is choice: If speakers select one element over another, and that selection contributes to a contrast in meaning, then that element is a signal.

THIY, we argue, is therefore a signal. When Reynard says (S.1.1.83) ''it may take a hell of a long time to come, if he puts it into thuh diplomatic bag,'' he chooses THUH over *a*, *this*, *that*, and other determiners. He means something different by ''thuh diplomatic bag'' than he would by ''a diplomatic bag.'' There is no

controversy here: Reynard's choice of THUH is a signal. The same argument applies to THIY, as when Reynard says (S.1.1.22) ''u:h you mean that thiy thiy the papers are, more or less set ad hominem.'' He means something different by ''you mean that thiy ...'' than he would by saying ''you mean that thuh ....'' By selecting THIY over THUH, he is telling his addressee roughly, ''I am stopping immediately to deal with a major problem.''

THIY is only one way to signal an immediate suspension. The word *a* shows the same pattern. Although there were only 16 cases of nonreduced *a* (ei) in our corpus (produced by 11 speakers), they behave similarly to THIY. Of these cases, 69% were either immediately preceded by or followed by a pause, filler, or repair. In a matched set of reduced *a*s produced by the same speakers, only 13% were immediately preceded or followed by a disfluency ($\chi^2 = 10.49,\ p < .01$). Though our corpus doesn't mark other nonreduced vowels, we suspect that the same differences occur for other words as well.

The claim that THIY is a signal appears to be controversial in some quarters, so let us consider four counter arguments. According to the first counter argument, THIY is merely a symptom because it is a phonetically conditioned consequence of interrupting one's speech, or of dragging out one's speech. But as our data show, THIY is not automatic after an interruption; speakers produced THUH 40% of the time at the point of suspension. Nor is THIY merely THUH with an elongated vowel. Speakers cannot start uttering THUH, elongate the vowel, and produce THIY. The vowel in THIY is distinct. As Shriberg (1994) has shown, speakers do elongate the vowel in the first of two repeated THUHs, but the result is an elongated THUH, which is distinct from THIY.

According to a second counter argument, the choice of THIY over THUH is not a lexical or syntactic choice (both are the word *the*), and therefore it doesn't signal a difference in meaning. In language use, however, many contrasts in meaning aren't lexical or syntactic. One comes from contrastive stress. To say ''SHE's the doctor to see about psoriasis'' means something different from ''She's the doctor to see about PSORIASIS.'' Another source of contrast is intonation. People mean something different when they say ''hi'' with exaggerated intonation to a long lost friend than when they say ''hi'' with flat intonation to an unwelcome neighbor. A third source of contrast is the elongation of vowels to signal extent, as in ''Boy, that was a lo-o-ong movie!'' In spontaneous speech, speakers mean things by a variety of choices that aren't lexical or syntactic.

According to a third counter argument, THIY has nothing to do with meaning because its choice has nothing to do with the topic of conversation. When Reynard says ''u:h you mean that thiy thiy the papers are, more or less set ad hominem,'' his choice of THIY has nothing to do with his question about the papers being more or less set ad hominem. It is true that THIY has nothing to do with the official business of a conversation, but it is no less a signal for that. In selecting THIY, Reynard means that he is going to suspend his speech after THE in order to make a repair, and this meaning is addressed to the presentation of the utterance. In spontaneous conversation, many signals are addressed to the presentation of utterances (Clark, 1996). These include back channel responses like *uh huh* and

yeah, requests for repair like *what*? or *huh*?, and editing expressions like *I mean* and *you know*. If all of these are genuine signals – and they are by all criteria – then so is the choice of THIY over THUH.

According to a fourth counter argument, for an action to be a signal, speakers must be conscious of their choice. And because they are not conscious of their choice of THIY over THUH, THIY cannot be a signal. Speakers, however, aren't ordinarily aware of the lower level selections they make in production, such as the choice of *the* over *a*. What they are aware of are higher level choices. Reynard might decide that the papers he is referring to are mutually identifiable to him and his addressee, and that decision leads, in lower level selection processes, to the choice of *the* over *a*. In the same way, Reynard might decide that he is going to suspend speaking to deal with a problem in the next definite NP, and that decision leads, in lower level selection processes, to the choice of THIY over THUH. Conscious choice cannot be a criterion for distinguishing signals from symptoms.

If THIY is a signal, addressees should be able to interpret it as such, and there is evidence in our data that they do. On 15 occasions, speakers produced THIY and were immediately cut off by their interlocutors; on another occasion, the speaker was cut off one word after THIY. In only one case was a speaker cut off after producing THUH. In 12 of the 16 interruptions of THIY NPs, interlocutors explicitly helped the speaker formulate the utterance or assured the speaker that they had understood. In the following example, three speakers work to establish the understanding of a reference (S.3.4.363–S.3.4.380):

(26) A: it's still noisy, even on that side is *it,*
?: *m,*
B: yes, oh yes, . but not not as much as on the side looking out towards thi:y u:m what's the name,
A: what, – yes,
C: yes, – no, – thah thah *thi:y*
B: *that* that side's, – thi:y
C: the Liston Close side, is noisier than this side,
A: oh that side, is noisier than this,
B: oh certainly

Both B's and C's THIY NPs were interrupted by the other's trying to establish mutual understanding (see Clark and Schaefer, 1989; Clark and Wilkes-Gibbs, 1986). Most interruptions in talk do not build on the interrupted speech, but rather change the topic of conversation, introduce tangential information, or serve a related function (Kennedy and Camden, 1983). So it is significant that when interlocutors interrupt THIY NPs, they are, instead, trying to establish mutual understanding. These data provide some evidence that addressees interpret THIY as a signal of problems in formulation.

Spontaneous speech is replete with signals about the actual process of production – signals like THIY, *I mean*, *you know*, *uh huh*, and *huh*? Any model of production will be incomplete until it accounts for these signals, including how

they are planned and produced on the fly. The use of THIY illustrates how well tuned speakers and listeners are to each other's speech. In choosing THIY, speakers not only signal imminent problems, but try to maintain as much fluency as possible. Both of these actions should ease the listeners' work of understanding.

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