Canadian Raising in Manitoba:

Acoustic Effects of Articulatory Phasing and Lexical Frequency

BY

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Abstract

This thesis examines the occurrence of Canadian Raising in Manitoba, using acoustic-spectral analysis. Factors such as lexical frequency and morphological complexity are examined to determine their role in Canadian Raising production within the sample population.

One of the key findings is that what are usually analyzed as "raised" phones in pre-voiceless context are considerably shorter than non-raised (pre-voiced) phones, but do not exhibit substantial differences in terms of vowel quality. A method of multiple-timepoint spectral analysis used to achieve this finding is described in detail.

Examination of raising-like diphthongs before /ɹ/ indicates that vowel duration differences exist in different contexts. There is some indication that morphological complexity is related to variants of "raised" phones, such that complex morphology is correlated with longer duration.

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Lastly, although certainly not least, I would like to express my love and gratitude to my amazing wife, Annika, who has supported and stood by me throughout this long journey, taking charge of the raising of our two children, Shoki and Cyan, being there in the good and bad times, and everything in between. I never would have been able to come this far without her by my side, and I can't thank her enough for everything she has brought into my life.

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1 INTRODUCTION

1.1 CANADIAN RAISING

One of the defining features of most varieties of Canadian English, as spoken west of the province of Québec, is the contextual usage of specific phonetic variants of the diphthongs /aɪ/ and /aʊ/[1]. "Canadian Raising" (henceforth CR) is the accepted term for this feature of Canadian English (Chambers, 1973). CR has been fairly well documented in the linguistic literature, and most analyses agree broadly on its basic description, in terms of both the phonetic characteristics of the variants involved, as well as the specific phonetic/phonological environment in which they occur. CR has been noted in Canada at least since Joos' (1942) seminal paper, and has since enjoyed wider attention among linguists. The situation found in Canada (Ontario, specifically) is described by Joos:

> "[T]he diphthongs /aj/ and /aw/ (but not /oj/ in *boy*) each have two varieties. One, which I shall call the HIGH diphthong after its initial tongue-position, begins with a lower-mid vowel-sound; it is used before any fortis consonant with zero juncture: ... *white*, *knife*; *shout*, *house*. The other, the LOW diphthong, is used in all other contexts: ... *high*, *find*, *knives*; *how*, *found*, *houses*," (Joos, 1942, p. 141).

We can fairly substitute *word-internal voiceless consonant* for *fortis consonant with zero juncture* (Chambers, 1973, pp. 125-126). With such terminological modifications, the analysis in Joos (1942) essentially stands to this day as the generally accepted description of CR. For example, one widely-used Canadian linguistics textbook

1 Canadian Raising, or something like it, also occurs in some areas of the United States as well, as noted in Chambers (1973), Allen (1989), Dailey-O'Cain (1997), Roberts (2007), inter alia. A variety of transcribed forms are found in the literature on the subject. In this work the forms /aɪ/ and /aʊ/ will be used throughout, except in quotes from other works, which will preserve the original's representation. See Idsardi (2005) for some discussion on this topic.

describes CR in these words: “The [ay] occurs before the class of voiced consonants or in word-final position, and the [ʌy] occurs before the class of voiceless consonants,” (O'Grady & Dobrovolsky, 1992). Aside from changes in terminology, this is virtually identical to the description Joos made some fifty years earlier.

1.2 Goals and Purpose

Since Joos’ early work, CR has been examined under a number of leading phonological theories of their time, including: featural phonology (Chambers, 1973); rule-ordering (Picard, 1977); autosegmental phonology (Paradis, 1980); optimality theory (Myers, 1997); and, more recently, the exemplar model (Hall, 2007). Within this historical context, one of the goals of this thesis will be to examine CR from the perspective of a contemporary theoretical framework, that of Articulatory Phonology, or AP (Browman & Goldstein, 1992a). The choice of AP as a model for CR is not merely to put a contemporary “spin” on CR, but because within AP a degree of variation in the phonetic output of CR can be accommodated, rather than having to deal with it as a categorical phonological alternation as has been typically the case in previous studies.

It is worthy of mention that within the literature on CR as it occurs in Canada, there is a general lack of data for most of English-speaking Canada outside of Ontario, Hagiwara’s (2006) study of overall vowel production in Winnipeg being one recent and notable exception. The present study will thus shed some more light on Western Canadian English, by examining in greater detail the occurrence of CR among speakers

in Manitoba, home to some of the oldest English-speaking European-origin settlements in Canada west of Ontario[2].

In addition to thus broadening the geographic scope of CR research beyond the confines of Ontario, this study will also provide information regarding unusual aspects of CR that this writer has noted among English-speaking Manitobans, and which do not entirely fit the generally held model for CR. The most notable difference that the author has noticed in Manitoba English is the unexpected application of CR in at least some cases before a final /ɹ/, in words such as fire, wire, hire, etc. This particular use of CR has not been widely noted before in Canada, and is worthy of further investigation[3]. The application of CR in such an unexpected environment (i.e. before a voiced segment, the canonical environment for non-application of CR) is surprising given the existing theoretical analyses of CR.

Of perhaps even greater interest, this writer has also noticed that not all cases of /aɪ/ before /ɹ/ are treated alike by Manitoba speakers in regards to CR application. While some words seem (impressionistically) to reliably occur with CR, others which appear to have the same or supposedly similar underlying phonological structure either do not exhibit CR, do not exhibit it as reliably, or exhibit it to a lesser degree than would be expected. This author's intuitions (as an English-speaking Winnipegger)

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2 The current study's findings are based on the speech of English speakers in Winnipeg, the capital of Manitoba. Lord Thomas Douglas, 5th Earl of Selkirk, established a colony (Assiniboia, or the Red River Settlement/Colony) at the forks of the Red River and the Assiniboine in 1812, which is located at the approximate centre of present-day Winnipeg. This was the first attempt at a permanent European agricultural settlement in the region (as opposed to already-existing trading posts), and brought the first substantial population of English-speakers to what would eventually become Manitoba (Great Plains Publications, 2007).

3 There are a few references in the literature regarding the raising of /aɪ/ before /ɹ/ in some American dialects (see Kilbury (1983) Vance (1987), Dailey-O'Cain (1997), and Thomas (2001, pp. 79-81)), as well as in Scottish English (Gregg, 1973) – in all cases, dialects which also exhibit Canadian-like pre-voiceless /aɪ/ raising.

suggest that at least two factors may be involved in such variability: (1) the morphological complexity of a given word; (2) the relative frequency of a given word. Both of these intuitions find support in previous findings in CR research, which will be discussed in § 2. It is notable that very little research has looked at the ramifications of morphological complexity in tandem with detailed acoustical phonetic data in the context of CR; this paper may serve as a small bridge across this research gap.

The hypothesis taken in this thesis is that lexical frequency and morphological complexity are independent factors, which together contribute towards the likelihood that CR will apply in any given circumstance. This approach regards CR as a phonological phenomenon that is not necessarily to be seen as a categorical rule which always applies given the right environment, but rather as the product of a number of influences or tendencies, and which may or may not occur, with some attendant variation[4]. In fact, this approach allows for the possibility of gradient CR occurrence – that some words may exhibit more or less CR than others. This thesis will investigate how the factors of lexical frequency and morphological complexity are related to the actual occurrence of CR in Manitoba English, connecting these to acoustical phonetic characteristics (specifically, acoustic formants and vowel duration) within the AP model. The focus of this research into the aforementioned factors does not preclude the possibility that other, as-yet unidentified factors[5] may also play some role.

The purpose of this thesis is: (1) to examine the occurrence of CR in Manitoba in a larger phonetic environment than has previously been described, specifically the

4 See Labov (1969) regarding "variable rules" in contrast to categorical distinctions.

5 One suspects that sociolinguistic factors might also have some role to play. The present research has done as much as possible to eliminate such variables, by limiting its scope to subjects of the same place of origin, age cohort, and gender – but future research might explore this avenue.

occurrence of CR in front of the non-voiceless segment /ɹ/; (2) to incorporate factors beyond surface phonological detail which are necessary to accurately describe the application of CR in Manitoba English (and quite possibly the application of CR in other geographical regions): specifically, lexical frequency and morphological complexity; (3) to describe CR within the model of Articulatory Phonology, accounting for variation and variability in the application of CR. The outline of this thesis is as follows: § 2 will examine previous linguistic findings on CR and the acoustic characteristics of North American English diphthongs, discuss the roles of morphological complexity and lexical frequency in relation to CR, and introduce Articulatory Phonology as an appropriate theoretical model for CR; § 3 will outline the methods used to collect the data for this thesis; § 4 will report on the collected data, analyzing the results in terms of CR occurrence especially in relation to the effects of lexical frequency and morphological complexity, and will discuss how the AP model can explain some of the established facts of Manitoba CR; finally, the Conclusion will summarize and outline some unresolved questions for future research.

2 Background

2.1 The Acoustics of Canadian Raising

The discussion of CR in the seminal paper by Joos (1942) is largely concerned with the relationship between, on the one hand, the character of the raised variants of /aɪ/ and /aʊ/ in Canadian English and, on the other, the general occurrence of shortened vowels in pre-voiceless contexts in English. Regarding his own Wisconsin (i.e. non-Canadian) dialect, Joos notes that there are no raised variants of the diphthongs equivalent to CR as he finds it in contemporary Ontario speech. In his own dialect, vocalic shortening (of diphthongs and other vowels) does occur in pre-voiceless context – precisely the same environment as noted for CR. While the present study will not be overly concerned with historical sound change, we may note that these facts did lead Joos to propose that the shorter duration of vowels in pre-voiceless context was the original source of CR in Canadian English (Joos, 1942, p. 142).

Beyond the narrow scope of CR, studies of English vowel duration in general have noted vowels before voiced consonants (usually in the same syllable) are of considerably longer duration than those in a pre-voiceless context. Peterson and Lehiste (1961, p. 702), looking at a range of English vowels, including diphthongs as well as syllabic /ɹ/, observed that pre-voiced vowels were longer than pre-voiceless consonants by approximately 50% vowel duration.

Most considerations of CR in the decades following Joos have neglected to examine in much detail the relationship between the specific diphthong variants used in CR and vowel duration. Typical in this regard is Chambers (1973, 1989). Working within a rules-based approach, Chambers deals with vowel shortening and raising as separate

(albeit hypothetically historically related) rules which apply in some of the same contexts, but does not specifically address shortening as an *aspect* of CR. The two are nonetheless associated, by virtue of both rules applying in pre-voiceless contexts in Canadian English. Finding it clear that the two phonetic variants which comprise CR differ greatly in terms of duration, Chambers associates shortening and raising through rule-ordered phonology and suggests, like Joos, a conjectured historical relationship – the latter being something this thesis will not delve into.

In addition to durational differences, acoustic studies of English vowels have revealed distinct differences in vowel formant frequencies depending on the voicing of the following consonant. In one such study, Thomas (2000) investigated the relationship between the acoustic characteristics of the /aɪ/ diphthong and voiceless codas in American English (i.e. *non*-Canadian dialects). In the first part of this paper Thomas looked at diphthong production among two disparate groups of speakers: one of non-Hispanic white Ohioans, and another of central Texas Mexican-Americans. He found, for both subject groups, that pre-*t* (i.e. pre-voiceless) /aɪ/ had both a lower F1 and a higher F2 than in a pre-*d* (i.e. pre-voiced) context – as will be shown later, this resembles findings for CR vowels, although this particular study does not associate these findings with CR per se. The production of diphthongs involves articulatory movement and change in formant frequencies over time, but such movement and change is not constant throughout the vowel duration; Thomas relates his findings regarding these changes in terms of vocalic 'steady states':

> "The productions of /ai/ by the central Ohio subjects suggests a more complicated picture of steady-state pattern than [other] studies describe. In many cases, the central Ohio speakers produced two clearly defined steady states. However, a trend emerged in which, if only one

> steady state was present, it was at the beginning of the diphthong for pre-/d/ /ai/ and at the end for pre-/t/ /ai/." (Thomas, 2000, p. 10)

It should be noted here that steady states in diphthong production will become relevant for our analysis of CR in Manitoba, whereas most studies of CR have focused on only the vowel nucleus when it comes to differentiating CR and non-CR vowels, rather than change throughout the diphthong. Thomas' Texas speakers (geographically, the farthest removed from any CR region among his participants) showed no trend of steady state differentiation associated with the following consonant.

In the second part of his paper, Thomas describes a perceptual experiment involving computerized speech synthesis. The subjects listened to synthesized stimuli approximating /aɪ/, with tokens varying in terms of both formant frequencies as well as duration, and were asked to identify each stimulus as either an instance of "tight" (i.e. pre-voiceless), "tied" (i.e. pre-voiced) or "tie" (no final consonant). The experimental results indicated that "duration of the preceding vowel ... had the greatest effect on identification of stimuli," (Thomas, 2000, p. 15). In light of this finding, it is surprising that vowel duration data for the first (production) experiment is not related in any detail – based on the second (perception) experiment, one would suspect that some significant durational differences between pre-voiceless and pre-voiced contexts would be found. Nonetheless, the finding that vowel duration was a cue towards post-vowel consonant voicing, is significant in relation to CR.

Moreton (2004) also investigated the acoustic correlates of postvocalic voicing following /aɪ/ (as well as other diphthongs not relevant to this study) among a range of North American English speakers, including speakers from the eastern United States,

California, and Canada (Moreton is not more specific with regards to province or region for his Canadian speakers), and found results similar to Thomas' findings, in terms of F1 and F2 production. Moreton characterizes these findings as 'hyperarticulation', or the "raising of that which is normally high, and lowering of that which is normally low," (Moreton, 2004, p. 25). In similar fashion to Thomas's (2000) second experiment described above, Moreton also conducted a perceptual experiment within this same paper, and relates results similar to Thomas, with the notable addition of the "surprising finding ... that F_2 (not hitherto identified as a voicing cue) is a stronger voicing cue ... than F_1," (Moreton, 2004, p. 24); analysis of the Manitoba data in § 4 will be shown to support this finding. Although focusing almost exclusively on the variations of F1 and F2, Moreton also found the effect of vowel duration to be significant: "[e]ach extra millisecond of diphthong nucleus reduces the 'ate' [as opposed to 'aid', i.e. pre-voiceless context] odds by a factor around ... 1.09," (Moreton, 2004, p. 23).

Summers has also examined the relationships between post-vocalic voicing, vowel duration, and vowel F1 properties in English. One study (Summers, 1987) involved acoustic recording of subjects as well as optical measurement of (external) lip and jaw movement, while subsequent research (Summers, 1988) involved a perceptual experiment with a listening task for the subjects. These studies are notable, and relevant to this research, in their examination of how post-vocalic voicing differences affect vowels at different stages:

> "Voiceless utterances were considerably shorter than voiced utterances in total vowel duration. However, initial jaw lowering durations and *F1* initial transition durations gave no evidence of being briefer in *V-* utterances ... *V-* utterances necessarily contributed a greater proportion

> of total vowel duration to jaw lowering and to initial *F1* transitions ... final-consonant voicing has greater effects on the final portions of vowels than on the initial portions," (Summers, 1987, p. 861).

However, while the final portions of vowels display the largest differences in relation to post-vocalic voicing, F1 is affected throughout the vowel duration:

> "*V*- utterances displayed higher *F1* onset frequencies and higher steady-state frequencies than *V*- utterances. *F1* steady-state durations and final transition durations were longer in *V*+ utterances than *V*- utterances. *F1* offset frequencies were much lower for *V*+ utterances than *V*- utterances," (Summers, 1987, p. 860)

Such findings indicate that there is value in exploring in more detail the differences between pre-voiceless and pre-voiced vowels, in terms of formant frequencies, throughout the vowel duration rather than merely at a small number of selected points. § 3.4 discusses the method used in the present research to do so.

The papers discussed in this section, utilizing acoustic and perceptual analyses of the relationship between post-vocalic voicing and diphthongs, generally agree that the most significant differences between pre-voiceless and pre-voiced vowels are the values for F1 and F2, as well as vowel duration. These factors will be examined in the context of the Manitoba data in more detail in § 4.

2.2 Variation, Morphological Complexity, and Lexical Frequency

It was discussed in § 1 that morphological complexity and lexical frequency are both suspected (independently) to play a role in determining the application and degree of CR which occurs in at least some spoken forms among Manitoba speakers. It has also been observed that CR does not seem to be an all-or-nothing phenomenon, but

rather may occur within a continuum of occurrence, as determined by these (and potentially other) variables. This section will discuss these two factors individually, relating them to the concept of variable CR occurrence where possible.

Looking at morphology first, it is notable that very little research on CR has determined a role for morphological structure and boundaries with regards to CR occurrence. In Joos' seminal paper, the notion of 'juncture' is invoked in his description of CR: "...the high diphthong ... is used before any fortis consonant with zero juncture," (Joos, 1942, p. 141). Chambers (1973) addresses the role of morphology within CR with reference to Joos, discounting *juncture* as an obsolete concept with no contemporary equivalent:

> "It is sometimes assumed that the notion of 'juncture' survives in the present theory in the form of (morphosyntactic) 'boundaries,' but it is not difficult to show that the two notions are really discrepant. For example, the two formatives ... *bisexual* and *bicycle*, are morphologically similar and therefore must have the same internal prefix boundary, but since the former has an unraised vowel [i.e. CR does not apply--*DSO*] in the first syllable where the latter has a raised vowel [i.e. CR does apply], a description of Canadian Raising which constrained it to apply only in the environment of "zero juncture" would have to impose a juncture into the former, but not the latter," (Chambers, 1973, pp. 125-126)

Returning to this topic in a later paper, Chambers explains away the distinction between these two prefixes as an issue of boundary type: "Both *bicuspid* [non-raised] and *bifocal* [raised] have the prefix *bi#*, whereas *bicycle* has the prefix *bi+*," (Chambers, 1989, p. 80). In other words, whereas word boundaries *do* play a role in Chambers' analysis of CR – "Rule (3) [Chambers' Canadian Raising Rule] operates strictly within word boundaries for all speakers," (Chambers, 1973, p. 116) – internal morphology is

completely ignored by CR, allowing it to apply in the case of *bicycle*[6]. Since Chambers, the general consensus on CR appears to be that, aside from some small idiosyncratic individual and lexical variation, CR only fails to apply for a diphthong in the appropriate pre-voiceless environment if there is an intervening word boundary before the following consonant. Note that this is a categorical distinction – the presence versus absence of a word boundary determines the occurrence versus non-occurrence of CR. Such an analysis cannot account for variation, or *degrees* of raising, something which is suspected for Manitoba speakers[7]. Much of the research on CR subsequent to Chambers (see Myers (1997), Moreton & Thomas (2004), Idsardi (2005), Hall (2007), et al) has largely ignored morphological complexity as a potential factor in CR application. Nevertheless, the role of morpheme structure and boundaries cannot be said to have been conclusively settled, and will be examined in more detail here with respect to Manitoba speakers in § 3 (method) and § 4 (analysis).

A second factor suspected to play a role in CR variability is lexical frequency. Joan Bybee (see Bybee (2001) and (2002), and Bybee & Hopper (2001)) has extensively researched lexical frequency and its effects across a number of linguistic domains. She has developed a usage-based model of language which both predicts and accounts for variability and variation. Of relevance to this thesis, variation in the occurrence of phonological rules such as CR can be related to lexical frequency within the usage-based model. Looking at several documented phonological sound changes, including changes affecting English vowels such as short vowel raising in Philadelphia and

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6 This ignores the fact that bi- in bicycle is not an overly productive prefix, and that it is worth questioning whether it does in fact function as a prefix, at least for some speakers.

7 Hall (2007) is an example of recent research that approaches CR as a variable phenomenon, rather than a categorical, all-or-nothing rule.

centralization in San Francisco, Bybee states that there is "evidence that high-frequency words undergo vowel shifts before low-frequency words," (Bybee, 2002, p. 267). Elaborating on this point, she refers to specific kinds of changes which can be described as *reductive*: "in general, reductive changes tend to occur earlier and to a greater extent in word and phrases of high frequency," (Bybee, 2002, p. 268). CR might well be described as a reductive vowel sound change, both in terms of the gestural movement involved (the raised form arguably involving less gestural movement through the vowel space than the typical, unraised form)[8] as well as the shorter vocalic duration involved (see § 2.1), and so would be expected to fit this pattern of greater occurrence among high-frequency forms. Bybee references Jurafsky et al (2001) who, in a study on the relationship between duration and lexical frequency, report that "high-frequency words (at the 95th percentile) were 18% shorter than low-frequency words (at the 5th percentile)," suggesting that "the entire articulatory span of high-frequency words may be reduced compared to low-frequency words," (Bybee, 2002, p. 269). File-Muriel discusses the treatment of lexical frequency as a scalar rather than categorical (high vs. low) variable, arguing that a scalar treatment is preferable: "No matter where one places the division between high- and low-frequency words, it becomes impossible to determine whether there are differences between words that have been classified as belonging to the same frequency category," (File-Muriel, 2010, p.

8 Hagiwara, however, characterizes the difference between the two forms differently: "it is not simply raising of the nuclei that has taken place, but of the entire vowel trajectory. The entire diphthong appears to have 'advanced' along the path of the transition in the 'raising' context. Whether this is merely the product of vowel shortening or indicates a global shift in the featural 'targets' cannot be determined at this time. It is perhaps worth noting that a similar auditory distance seems to be covered in both cases, even though the *raised* diphthongs are on average 30% shorter than their unraised counterparts," (Hagiwara, 2006, pp. 12-13). However, the method used in this thesis differs from Hagiwara's study, in that a greater number of timepoints are measured and used to provide a more precise image of the movement difference between the two forms – see § 3 and 4.

10); this thesis takes the same approach, treating lexical frequency as a continuum rather than a set of categories[9]. The relationship between vocalic duration and lexical frequency in the Manitoba data will be examined in § 4.

Bybee's examination of lexical frequency in relation to sound change offers some indication of a direction to take in the examination of Manitoba CR to be undertaken in this study:

> "The study of the diffusion of sound change in the lexicon contributes to a better understanding of the nature and causes of sound change. Changes that affect high-frequency words first are a result of the automation of production, the normal overlap and reduction of articulatory gestures that comes with fluency ... If a sound change does not proceed from the most frequent to the least frequent words, then we should seek explanation in some other mechanisms of change." (Bybee, 2002, p. 287)

This statement lends support to the notion that lexical frequency is expected to be a significant factor in an ongoing change, in this case the extension of CR into a phonologically unexpected environment (i.e. before /ɹ/). Although Bybee's point here is to connect lexical frequency with historical sound change, even without assuming a specific historical relationship or direction of change this suggests that greater occurrence of CR in high-frequency /ɹ/-final words would be expected, as well as an accordingly lower occurrence of CR in low-frequency words – both empirically testable hypotheses. Bybee's statement here also suggests that a good model for CR variability should include a phonological description bearing on gestural overlap and/or reduction, such as Browman and Goldstein's AP model, which will be discussed in § 2.3.

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9 Baayen & Lieber (1997) present a more thorough examination of the nature of lexical frequency distribution.

Both of the factors discussed in this subsection, morphological complexity and lexical frequency will be examined for their role in CR as it occurs among Manitoba speakers, especially in regards to accounting for variability among CR tokens. § 3 will discuss how these variables are incorporated into the data collection method, and § 4 will examine their statistical relationship to CR occurrence within the collected data.

2.3 Articulatory Phonology

One of the goals of this thesis is to provide an analysis of CR which can account for the kind of variation observed in Manitoba speakers, as discussed in § 2.1 and § 2.2. The theoretical model of Articulatory Phonology, as described by Browman and Goldstein (1988, 1989, 1992 inter alia), seems amenable to this approach. Bybee, (2001) and (2002), also discusses how an articulatory model of phonology is highly compatible with the usage-based theory she has developed to account for the role of lexical frequency (see § 2.2 above). The ability of AP to handle such factors as phonological variation and lexical frequency makes it a good model with which to examine the Manitoba CR data. As a model, AP provides a way to incorporate gestural timing into a description of CR – this will be developed and discussed in § 3 and § 4.

Within AP, lexical items have a phonological structure built upon a gestural score, which indicates the relative timing and magnitude of the various gestures involved, gestures in turn being combinations of movements of individual articulators (see Browman and Goldstein (1992a) for a good overview). Consonants and vowels are coordinated to each other in the gestural score via separate functional tiers (Browman & Goldstein, 1988). As described in § 2.1, the phonetic variants of CR exhibit durational differences, which need to be incorporated into an AP model for CR. In order to

account for these differing durations, the correct characterization of the gestural alignment of vowels to following consonants is crucial to an accurate AP description of CR. Browman & Goldstein (1988) found that pre-vocalic consonant onsets differed from post-vocalic consonant codas in terms of the manner in which they were aligned to their respective vowel – that is, depending on whether they follow or precede the associated vowel. For onsets, consonant-to-vowel alignment was found to depend greatly on the nature and number of consonants involved, with vowels being aligned to an aggregate *C-Center* for the onset as a whole (Browman & Goldstein, 1988, pp. 144-5). In contrast, coda consonants were found to exhibit a different manner of alignment to their (preceding) vowel: "postvocalic consonants are apparently organized with respect to their left edges (achievement of target) ... both within and between words," (Browman & Goldstein, 1988, p. 148). This statement is important in regards to CR, as a process conditioned by *post*-vocalic consonants.

Gestural timing in AP (see Browman and Goldstein 1990, 1995, inter alia) is accomplished for the most part through the specification of phasing relationships that exist between any two given gestures. Gestures are assumed to have an inherent temporal duration. However, gestural timing is accomplished not by absolute time reference, but rather by reference to a gestural cycle (in their work, measured in degrees, ranging from zero to 360). Phasing specifications between any two gestures may refer to any position within the 360 degree cycle, but there are a few phase angles which are commonly referred to: 0 degrees, the onset of the gesture; 180 degrees, the mid-point of the gesture; 240 degrees, "the effective achievement of the target" (Browman & Goldstein, 1990, p. 348); 330 degrees, the offset of the gesture; and 360

degrees, the conclusion of the gestural cycle. Gestural stiffness is a parameter which can also be specified so as to adjust the actual duration of a given gesture: "the stiffer the gesture, the faster the movement of the associated articulators," (Browman & Goldstein, 1990, p. 348). § 4 will apply relevant concepts from AP as described here to the Manitoba CR data and results.

3 METHOD

3.1 SUBJECTS

The data collected for this thesis consists of recordings of eight female subjects living in the city of Winnipeg, Manitoba, Canada. All of the subjects are native speakers of English, between 24 and 34 years of age at the time the data was collected. All spent their childhood in the province of Manitoba[10]. Female speakers alone were chosen in order to avoid the complications inherent in comparing the differing acoustic characteristics of male and female speech[11]; this author must leave it up to further research to determine the applicability of these results to the population more generally.

Subjects were given a short questionnaire to complete prior to being recorded. The four pieces of data collected in this questionnaire were the subjects': age; gender[12]; place of birth; place of residence in childhood. While informed that all information was strictly voluntary, every subject willingly provide all of the requested information. As well, the subjects were asked to sign a brief consent form releasing the use of their data to the researcher, with the assurance that their anonymity would not in any way be

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10 A majority of the subjects were in fact born and raised within the city of Winnipeg, and none were born or raised outside of the region of southern Manitoba (which, for this study, means as far north and west as Dauphin, as far east as Beausejour, and as far south as Morris). It must be left to future research to determine the applicability of these findings to the rest of the province of Manitoba, and the even larger region of Western Canada.

11 It is standard practice to map the acoustic characteristics of women's and men's vowel spaces distinctively. The two genders typically display divergences, sometimes quite large – not only in terms of detail, but even how the vowel space is patterned. See Kameny (1975), Hillenbrand et al (1995), Dailey-O'Cain (1997), Thomas (2000), Hagiwara (2006), et al.

12 Initially, both males and females were intended to be recruited as subjects, and hence gender was noted in the questionnaire; however, only female subjects were actually recruited, and recorded, for this study. The intention to solicit gender information was included in the original research proposal documentation, and approved without comment by the University of Manitoba Research Ethics Board.

compromised. Subject recruitment and selection accorded with the protocols of the Fort Garry Campus Research Ethics Boards of the University of Manitoba, and was fully approved by that body as *Protocol #J2008:055 "Canadian Raising in Winnipeg"*.

3.2 Recordings

Data was collected by recording each speaker's voice directly into a personal computer through the use of an audio interface device. The equipment used for the audio recording consisted of: a Shure KSM109 condenser microphone[13]; an M-Audio MobilePre USB analog-to-digital audio converter[14] (i.e. soundcard); and, an HP Pavilion dv6000 laptop computer running Microsoft's Windows XP operating system. The subjects were recorded in a variety of locations, depending on their personal preference and availability. These locations included the University of Manitoba Experimental Linguistics Laboratory, the author's home, or the subjects' own residences. Selection of location was restricted to locations with a low level of ambient background noise; intrusive noise did not become a problem for any of the recordings. The software used for the audio recordings was Steinberg's Wavelab (v2). The software used for analysis of the data was Praat (v4), freeware for the analysis of speech, which has been developed by Paul Boersma and David Weenink at the University of Amsterdam, The Netherlands. For the recordings, the subjects were seated comfortably with the reading material at hand, and the microphone positioned approximately 15 cm in front of them. They were instructed to read in a normal speaking voice, at their

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13 This microphone has a cardioid polar pattern, and a frequency response between 20 and 20,000 Hz, which is essentially flat between 300 and 2000 Hz, with a slight rise of less than 4 dB centred at around 3500 Hz.

14 Digitization consisted of 16-bit samples at a rate of 44.1 kHz, which is equivalent to compact disc quality.

own pace, and that they might pause or stop reading at any time. All of the subjects read the full list, and most completed the entire task in less than six minutes, with none exceeding ten minutes in total.

3.3 Word Selection

Each subject was recorded reading from a list of 202 sentences composed around the common frame of: "Say ___ , please." The blank in this frame was filled from a list of words which were selected so as to elicit tokens of the diphthong /aɪ/[15] in a variety of phonological environments (see Appendix 2 for the complete list). Three tokens of each selected word were included in the list, and the sentences were then arranged in semi-random order. First, the wordlist was randomized by a list-sorting macro. Then, the list was manually adjusted to ensure that any two tokens of the same word did not occur on the same page together (there were eleven pages in total). As a final modification, two "dummy" sentences were added between each page, in order to avoid potential end-of-page elicitation effects. These added repetitions were not used in the final data analysis.

The process of choosing words for the experiment reflected two main sets of criteria. The first set of criteria concern purely phonological details, specified so as to maximize the usefulness of the data provided by the speakers while simultaneously

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15 This thesis will deal with CR only insofar as the diphthong /aɪ/ is concerned. Although CR has been often defined as a single process occurring for the diphthong /aʊ/ in Canadian English as well as for /aɪ/, it has been noted that there is some evidence that the two diphthongs do not behave in identical fashion, and may in fact not undergo precisely the same process – see Chambers (1989) for some discussion. The present author draws no conclusions in this thesis as to whether or not both processes are instances of the same thing, and will accordingly leave the analysis of Manitoba /aʊ/ to future research. It may be worthy of note that, while the author does suspect something like CR to occur for /aɪ/ before /ɹ/, the same does not seem to be true for /aʊ/.

minimizing the amount of speech required for recording, and thus reduce the amount of time needed for their service towards this study. The second set of criteria reflected the desire to examine both of the two factors, lexical frequency and morphological complexity, suspected to play a role in the unique features found in Manitoba CR. The following two subsections discuss the methods involved in the word selection process.

3.3.1 Phonological Characteristics

The crucial data for this thesis concerns the tokens in the wordlist containing the diphthong /aɪ/. Words containing this diphthong were carefully selected so as to cover a wide range of possible forms. The words selected to elicit these tokens were chosen to fit the phonological frame /C-aɪ-C/. This larger set of words may be divided into two smaller subsets, corresponding to the final consonant phoneme. The first subset will be referred to as the *Stop-Set*, in reference to the fact that the final consonant in each case is a plosive[16]. For the Stop-Set, the consonants /t/ and /d/ were used, out of the set all possible English plosives, so that the phonological environments between words would vary as little as possible in order to facilitate later comparison. Based on the final consonant of each word, the Stop-Set is thus subdivided into the *T-Set* and the *D-Set*. Within the Stop-Set as a whole, the initial consonant was varied in order to elicit a range of phonetic contexts for the vowel. Consonants selected for word-initial position included: /b/, /l/, /h/, /f/, /s/, /ʃ/ and /w/, in order to cover a wide range of legitimate English words.

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16 Interestingly, Dailey-O'Cain has noted, in a study of the dialect of American English spoken in parts of Michigan, that raising occurs there when /aɪ/ precedes a nasal-oral stop combination, as in "pint" (Dailey-O'Cain, 1997, pp. 110-111). However, the current study did not examine post-vocalic nasal consonants or consonant clusters, disallowing any direct comparison with those results.

Included within the larger set of all tokens, but distinct from the Stop-Set, are a second set of words selected specifically to elicit tokens of final /ɹ/; as noted in § 1, one of the goals of this thesis is to examine the occurrence of CR before /ɹ/. Words in the *R-Set* were selected to fit the frame /C-ai-ɹ/, where the initial consonant C was varied so as to cover a range of real English words, as with the Stop-Set.[17]

As a final note regarding phonological characteristics for both the Stop-Set and the R-Set, words were chosen so as to form minimal pairs where possible, using nonce forms to fill in some of the lexical gaps. Within the R-Set, this included minimal pairs differing only in morphological complexity rather than phonological characteristics. The issue of morphological complexity is discussed in the next section.

3.3.2 Lexical Frequency and Morphological Complexity

As discussed in § 3.3.1, the primary basis for word selection is phonological, which is uncontroversial given that CR is a phonological process. However, as mentioned in § 1 and § 2, there are other suspected factors at work in some of the particular details of CR production in Manitoba. The author has noticed in his own speech, as well as detected impressionistically in the speech of other Manitobans, that there exists for some speakers a specific contrast within the words comprising the R-Set, and that it is only a subset of the R-Set which actually undergoes CR. R-Set words that do undergo CR are suspected to be higher frequency, monomorphemic words, such as: *fire*, *hire*, *tire*, and *wire*. In the author's estimation, other words in the R-Set which (arguably, in some

17 Only a small number of legitimate English words precisely fit this particular frame, resulting in a slightly smaller range of words for the R-Set than for the Stop-set in the relevant data.

cases) contain more than one morpheme, or are perhaps of a lower frequency[18], do not typically undergo CR; these include such words as: *higher*, *liar*, *shyer*, and *sigher*. An important topic in § 4 will be the relationship between morpheme boundaries and lexical frequency as they relate to the phonetic nature of the tokens in the R-Set. For this reason, information was gathered regarding the lexical frequency of all words selected for inclusion in the wordlist.

Three corpora were used to calculate lexical frequency. The chosen corpora have all been made available online for free use in scholarly research. They are: the Corpus of Contemporary American English (COCA); the Time Magazine Corpus (TMC); and, the British National Corpus (BNC)[19]. Together, these corpora comprise approximately 560 million words. The frequencies of the target words recorded in this study were calculated based on the hits for each word found in these three corpora, combined. Table 3.1 provides a complete list of the words in the wordlist comprising both the Stop-Set and the R-Set, with the number of total hits for all corpora indicated, along with an indication of the morphological complexity (measured by the number of morphemes) for words in the R-Set:

18 It would probably also be the case that nonce words, such as "fie-er", would not undergo raising for this same reason, as they are very low in frequency (i.e. close or equal to zero).

19 Please see Appendix 1 for the corpora URLs.

TABLE 3.1 LEXICAL FREQUENCIES FOR R-SET AND STOP-SET WORDS

R-Set	μ	Hits
higher	2	86409
fire	1	84570
wire	1	16124
hire	1	11477
tire (tyre)[20]	1	7805
dire	1	3425
liar	2[21]	3301
dyer	1	1066
sire	1	739
shire	1	431
mire	1	389
myer	2(?)	245
lyre	1	228
shyer	2	61
sigher	2	7
fie-er[22]	2	0
tie-er	2	0
whyer	2	0

Stop-Set	Hits
might	304183
white	251411
side	168579
light	130463
died	98763
fight	64378
wide	52796
sight	30673
tight	23258
height	16363
hide	15325
bite	9958
tide	8817
lied	5673
fide	1030
shied	675
bide	242
shite	128
dight	19
mide	6

The frequency information in Table 3.1 will be used to assign weight to each token's formant values in § 4.

20 Both N. American English *tire* and British English *tyre* were searched for, and total hits for both simply summed together.

21 For forms such as *liar*, *editor* etc. it is plausible that some speakers may reanalyze these as containing an agentive *–er* suffix, given pseudo-analogous forms such as *cheater*, *writer* etc. For this reason, I consider the analysis of *liar* as bimorphemic to be justifiable, and contrasts with the unquestionably monomorphemic form *lyre*.

22 As evident here, the wordlist included some nonce words (selected purely for phonological form); the low number of hits obtained for these duly reflects their lexical status.

3.4 Vowel Tagging

3.4.1 Formants and Timepoints

After recording the speakers reading from the wordlist, the speech data collected was subsequently analyzed in the Praat speech analysis software, using a software script developed by Will Styler[23] at the University of Colorado, Boulder, and modified by the present author. This script automated the task of recording the formant values for selected sections of speech. Each vowel was tagged at its onset and endpoint, and data for three discrete formant values (F1, F2 and F3) were collected.

Given that diphthongs are characterized by articulatory and acoustic movement in the vowel space, a large number of "snapshots" within the vowel duration were deemed desirable in order to capture a detailed image of this movement. While many studies of vowel spectra typically examine only a small number of timepoints (typically between one and three)[24] over the vowel duration, the analysis of the present data was carried out by modifying the Praat script to identify nine evenly-spaced individual timepoints throughout the duration of the vowel, extracting three formant values at each 10% interval between 10% and 90% of the actual duration, inclusive. That is to say, formant values were collected at 10%, 20%, 30%, 40%, 50%, 60%, 70%, 80%, and 90% of vowel duration. The Praat script also allowed the collection of discrete time values (in milliseconds) for each timepoint, which will become relevant for analysis in § 4.

The goal in recording so much data from each vowel was to be able to recreate the formant movements over time by graphing the varying formant values throughout the

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23 Will Styler, currently a Ph.D. student at the University of Colorado, graciously provided this script.
24 See MacLeod, Stoel-Gammon & Wassink (2009), Hagiwara (2006), Lehiste & Peterson (1961), et al.

full duration of the vowel, closely approximating an actual spectrogram image in graph form. To illustrate, Figure 3.1 and Figure 3.2 can be compared:

FIGURE 3.1 SPECTROGRAM OF "HIDE"

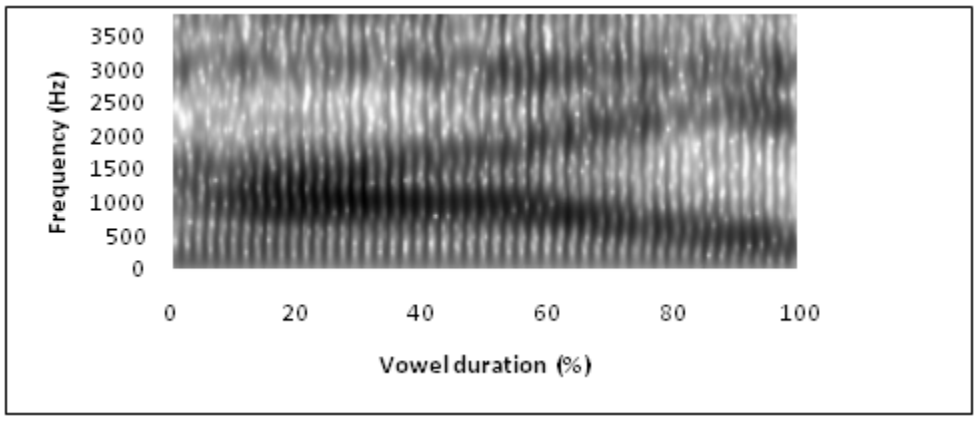


FIGURE 3.2 FORMANT VALUES OF "HIDE"

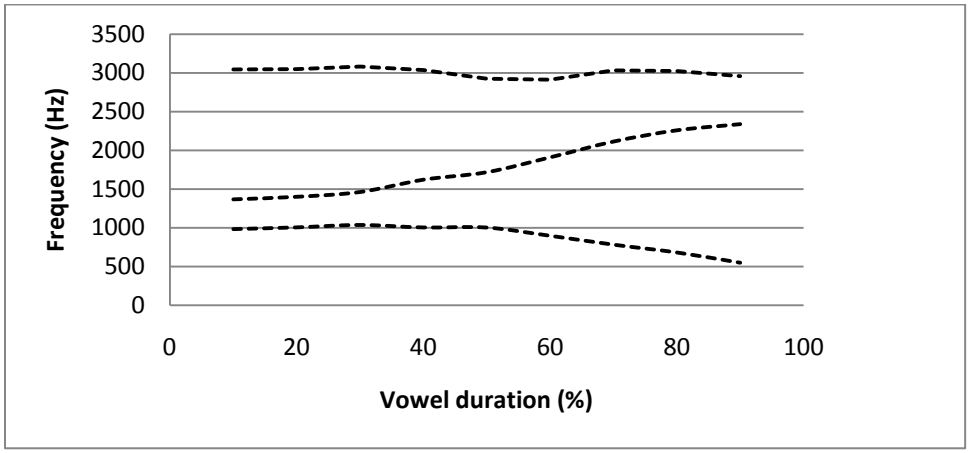


Figure 3.1 shows an actual spectrogram of one token of the word "hide" as produced by Speaker 1. Figure 3.2 shows a graph of the formant values extracted from the same token by the Praat script, from 10% to 90% of the vowel duration. When these images are overlaid on top of each other, as in Figure 3.3, they can be seen to compare favourably:

FIGURE 3.3 FORMANT DATA OVERLAID ONTO SPECTROGRAM OF "HIDE"

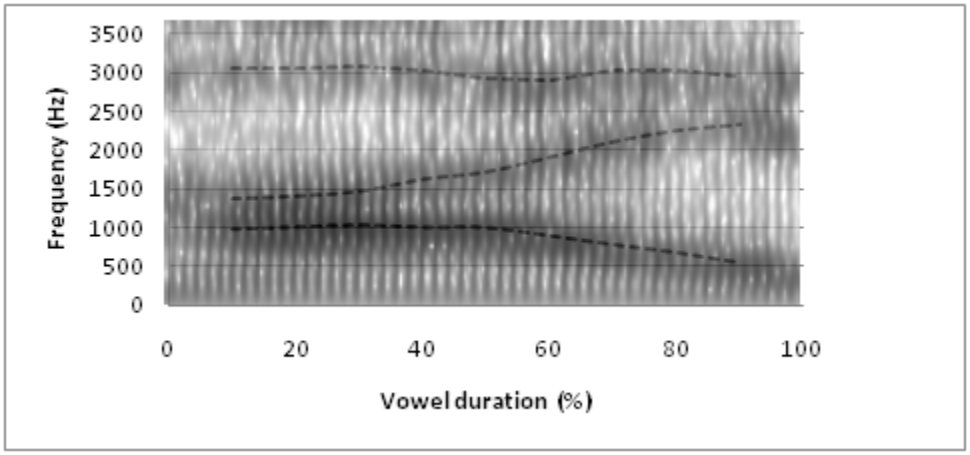


Figure 3.3 shows that the formant data graph, Figure 3.2, is a close approximation of the actual spectrogram Figure 3.1. Such a detailed image of plotted formant values could not be achieved with the use of only two or three timepoints – a large number of datapoints is necessary to capture all of the formant movement information. By applying this technique to the entire dataset, and so using all the formant values of a large number of tokens, a representative artificial spectrogram of that dataset as a whole can be synthesized by making a graph of the aggregated data (averaged and weighted for frequency), in effect producing an image representing the spectrogram of an abstract phonological item – in this case, the production of /aɪ/ in a given context for all the speakers in this study. This will be discussed in detail in § 4.

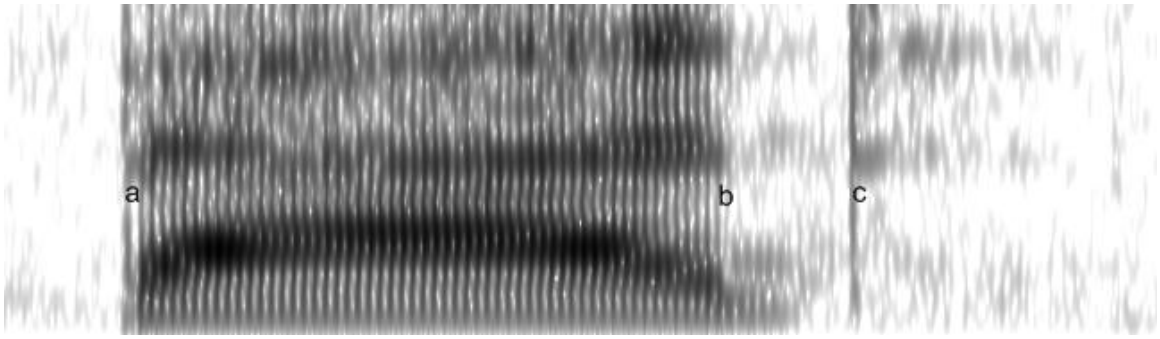
3.4.2 TAGGING IN CONTEXT

Vowel tagging is the process of marking spectral data at both the beginning and endpoints of the vowel in an individual token. Before running the script to extract the formant data, each token's vowel had to be tagged by hand. To do this accurately, the points of transition both out of the preceding consonant and into the final consonant needed to be clearly identified. As noted in § 3.3, a variety of initial consonant

segments were selected for in the creation of the wordlist. In general, this variety was unproblematic for the purposes of vowel tagging. However, different types of consonant-to-vowel transitions necessitated the identification of different cues to the point of vowel onset.

Plosives comprised the majority of consonants in the wordlist, both in initial and final position, and typically provided a readily identifiable point of transition under spectral analysis. Figure 3.4 illustrates the characteristics of plosives in both initial and final position:

FIGURE 3.4 SPECTROGRAM OF "BAD"[25]



As Figure 3.4 shows, the point of vowel onset following a word-initial plosive is easily identifiable, due to a sharp increase in across-the-board spectral activity, indicated at point (a). The spectral effects of the oral closure produced for a plosive in final position are also visible in Figure 3.4 as a marked decrease in overall activity, clearly seen to occur beginning at (b). Subsequent release of this closure occurs at (c), visible as a brief "spike" of activity in the spectrogram. With clear indicators of the kind seen in Figure 3.4, the demarcation of a vowel either following or preceding a plosive is straightforward: in tagging a spectrogram such as seen in Figure 3.4, the

25 Frequency and time are not indicated for this spectrogram and others in this section where such details are not relevant to the discussion at hand.

beginning of the vowel would be tagged at point (a) and the end of the vowel at point (b).

When consonants other than plosives were used in word-initial position[26], the majority produced no significant problems for the purposes of tagging vowels, although the spectral indicators characteristic for each are distinct. These indicators will now be described for each of the various non-plosives occuring word-initially: /l/, /s/, /ʃ/, /f/, /h/, and /w/, as well as for /ɹ/ occuring word-finally.

As a preceding segment, /l/ generally produces a reliably clear and identifiable transition point into a subsequent vowel, at the moment when the central oral obstruction is released, as seen in Figure 3.5:

FIGURE 3.5 SPECTROGRAM OF "LIGHT"

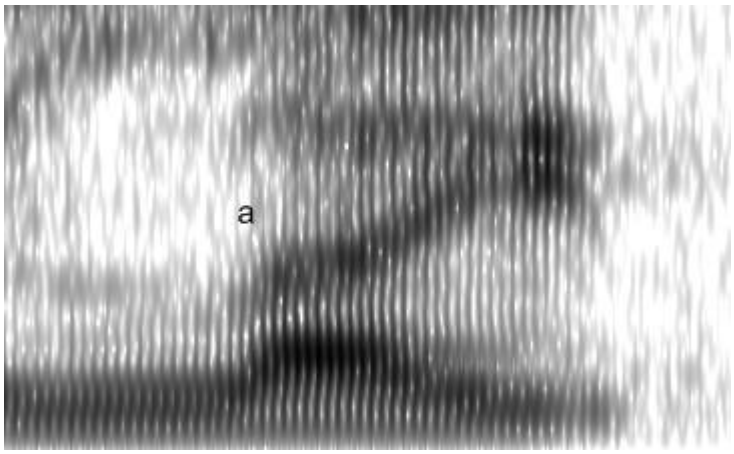


Figure 3.5 illustrates a typical transition from /l/, shown at point (a). Leading up to (a), there is little activity above F1, while subsequent to (a) there is a sharp rise in F1 as well as clear indications of activity in F2 and F3. Taken together, these indicators provide a consistent means of identifying a vowel onset following /l/.

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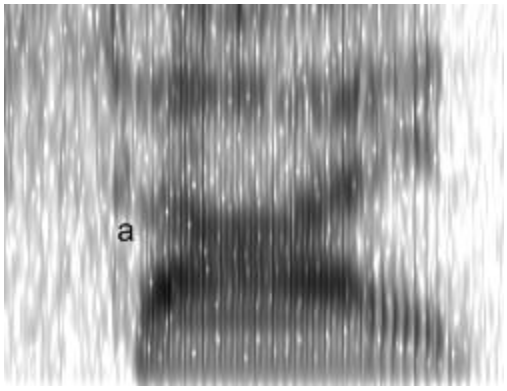
26 The only segments used in word-final position were plosives, as discussed in this section, and /ɹ/, which will be dealt with separately.

The voiceless fricatives used in initial position, /s/, /ʃ/, /f/, and /h/, all have quite similar spectral indicators of vowel onset. Figure 3.6 illustrates a spectrogram of a token of the word "side" to illustrate:

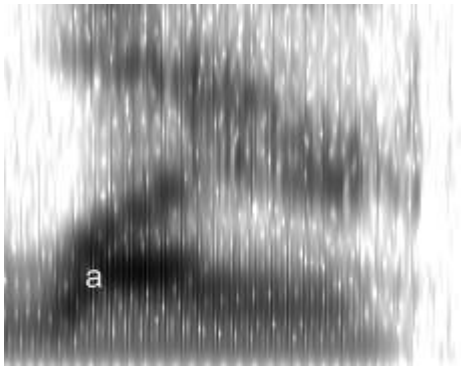
FIGURE 3.6 SPECTROGRAM OF "SIDE"



As seen at point (a) in Figure 3.6, the onset of voicing in a vowel following /s/ is clear and unmistakable, and thus the tagging of vowel onset for /s/-initial words is straightforward. The other word-initial voiceless fricatives used in elicitation, /ʃ/, /f/ and /h/, all produce spectrograms in which the transition from consonant to vowel is visually similar to /s/ due to the onset of vocalic voicing from the previous voiceless segment, and are similarly unproblematic for the purposes of vowel tagging.

Two segments in particular, however, do produce some difficulty when it comes to vowel tagging, and these necessitate a different, yet consistent methodology in order to identify the point of transition into the vowel. The first of these, /w/ does not produce a single, easily identifiable point of transition as an initial segment preceding a vowel:

FIGURE 3.7 SPECTROGRAM OF "WIRE"



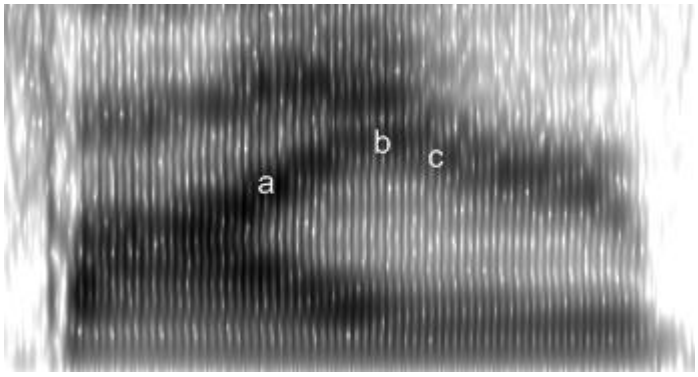
In Figure 3.7, it can be seen that the transition from /w/ to /aɪ/ is merely gradual, not abrupt. There is a steep but continuous rise in both F1 and F2 from almost the very beginning of the word, with F1 shortly levelling off while F2 continues to rise, albeit with a slightly reduced slope. F3 merely descends over the entire course of the word without any noticeable change in slope, providing no good indicators at all for vowel tagging. Point (a) in Figure 3.7 indicates the approximate location where the sharp rise in F1 begins to taper off towards a plateau (recalling Thomas's (2000) vocalic "steady states"), and F2 begins to reduce its degree of ascent. In analyzing tokens beginning with /w/, it is this point of "plateau onset" which was used as the indicator of the transition between /w/ and the subsequent vowel; the onsets of all vowels in /w/-intial words were tagged at this point.

The last segment of particular note is /ɹ/. In word-final position /ɹ/ emerges gradually from the preceding vowel, without a very clear and obvious single point of transition. Acoustics research indicates that English /ɹ/ is characteristically produced with low F2, and especially very low F3 values: "it can be said that typically, the F3 in an /r/ allophone can be expected to be roughly 60-70% of neutral, with certain exceptions. ... Lowering to 80% or more (that is, relatively less lowering) may be seen in particular

speakers, but those productions are not typical of the population," (Hagiwara, 1995, p. 121). When /ɹ/ occurs word-finally, the values of F2 and F3 typically decline continuously to the end of vocalization.

In contrast to /ɹ/, the diphthong /aɪ/ in English is characterized by a sharp rise in F2 over the course of the vowel, as well as a smaller but noticeable rise in F3, as seen in many of the figures presented earlier in this section. The combination of the two segments /aɪ/ and /ɹ/ in sequence can be seen in Figure 3.8, illustrating a spectrogram of a token of the word "fire".

FIGURE 3.8 SPECTROGRAM OF "FIRE"



Following the short burst of high-frequency noise at the beginning (that is, /f/), the characteristic spectral pattern of /aɪ/ followed by /ɹ/ can be seen: (1) a sharp rise in F2 some time after vowel onset, occuring around point (a); (2) a level plateau in F2 of some duration, with point (b) marking the approximate mid-point of that plateau; and (3) a gradual decline in F2 thereafter. F3 follows a pattern which is similar to F2, with the plateau occurring somewhat earlier in F3 than in F2 in this particular example; in other cases, F3 movement may be more closely aligned temporally with the movement in F2 – this seems to vary both inter-speaker and intra-speaker. The rise in F3 is also generally less steep than for F2, although both F2 and F3 show similar slopes on the

decline. The point at which the F2 plateau ends and begins to decline in value, indicated at (c) in Figure 3.8, was chosen as the cue used to demarcate the end of the vowel when tagging R-Set tokens.

4 Results and Analysis

The data collected for this thesis as discussed in § 3 will now be presented and examined statistically. First, a thorough look at the Stop-Set data will reveal the most significant characteristics of CR for Manitoba speakers, primarily focusing on the first two vowel formants and vowel duration, as outlined in § 2.1, and establish the basic acoustic pattern of CR. This result will then be used to examine trends of CR occurrence in the R-Set data, especially looking for variability and variation within the R-Set, as discussed in § 2.2. For both sets (Stop-Set and R-Set), lexical frequency information will be used to weight the data, which will be explained in § 4.1. Within the R-Set, the relationships between CR occurrence and both morphological complexity and lexical frequency will also be examined; these concepts were overviewed in § 2.2. Where appropriate, a discussion of the results in terms of the AP model, as described in § 2.3, will also occur throughout.

4.1 Stop-Set

To recall from § 3, tokens containing diphthongs preceding a plosive (the *Stop-Set*) were tagged from the onset of the vowel[27] until the onset of the final plosive, with readings taken for three formants at nine timepoints equally spaced, beginning at 10% of the vowel duration, with the final reading taken at 90% of the duration. The total duration of each entire (100%) tagged vowel was also recorded.

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27 See §3.4.2 for specifics regarding the tagging process for specific initial consonants.

From among all speakers, 416 individual tokens of Stop-Set words were recorded[28]. In addition to the formant and duration data, two other pieces of data were collected for each word (and tokens thereof): morphological complexity, as measured by the number of morphemes comprising each word, and; lexical frequency, as measured in overall corpus Hits[29]. The method used here treats lexical frequency as a continuum rather than dividing words into categories (such as high- vs. low-frequency). The twenty individual Stop-Set words are presented in Table 4.1, along with their morpheme count, lexical frequency in Hits, and the value calculated for Log of Hits[30], to be used for data-weighting purposes. File-Muriel (2010) discusses both the treatment of lexical frequency in scalar rather than categorical terms, and the use of Log values rather than raw frequency counts, although the methods used here were developed independently and prior to the publication of that article.

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28 In some cases, specific tokens were excluded due to either speaker or technical error, resulting in partially incomplete sets of recorded tokens for some speakers.

29 See §3.3.2 and Table 3.1.

30 Common Log (base 10) was used for these calculations as to reduce the range of frequency variation. A reader pointed out that Natural Log is more commonly used in lexical frequency research, but the Common Log serves the same purpose for this study.

TABLE 4.1 STOP-SET LEXICAL FREQUENCY BY WORD

D-Set	μ[31]	Hits	Log(Hits)
side	1	168,579	5.23
died	2	98,763	4.99
wide	1	52,796	4.72
hide	1	15,325	4.19
tide	1[32]	8,817	3.95
lied	2	5,673	3.75
fide	1	1,030	3.01
shied	2	675	2.83
bide	1	242	2.38
mide	1	6	0.78
Mean			**3.97**

T-Set	μ	Hits	Log(Hits)
might	1	304,183	5.48
white	1	251,411	5.40
light	1	130,463	5.12
fight	1	64,378	4.81
sight	1	30,673	4.49
tight	1	23,258	4.37
height	1	16,363	4.21
bite	1	9,958	4.00
shite	1	128	2.11
dight	1	19	1.28
Mean			**4.72**

As can be seen in Table 4.1, morphological complexity among Stop-Set words is limited only to D-Set words, and so cannot form a basis of comparison set-internally. Lexical frequency rates, however, can be used to weight the vowel formant and duration results[33]. This is achieved by multiplying each piece of data by the corresponding Log(Hits) value for that word, and divided by the mean Log(Hits) value for the set as a whole. For example, to frequency-weight the formant and duration values for a particular token of the word *died*, the frequency value for that specific word, 4.99, is divided by the overall mean D-Set frequency, 3.97, giving a multiplier value of 1.26. Multiplier values greater than 1 are reflective of higher than average frequency for any given word, indicating here that *died* is a relatively frequent word. The raw formant and duration values for each token of *died* are multiplied by the derived 1.26 multiplier in order to calculate frequency-weighted values. Less frequent

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31 Comparison based on morpheme count will only be conducted for R-Set words, but is included here for completeness.

32 This item was presented orthographically in the reading list as monomorphemic *tide*, although it is homophonous with the bimorphemic *tied*.

33 See Appendix 3 for a complete list of all Manitoba speaker data.

words will accordingly have a smaller multiplier, and so contribute in smaller proportion towards the overall calculations of frequency-weighted mean formant and duration values for the set[34].

By applying multipliers to frequency-weight the Stop-Set data in this way, we can calculate the mean formant values over time for each of the two component sets. Table 4.2 lists the calculated formant values (decimals rounded to the nearest whole number) for each set overall:

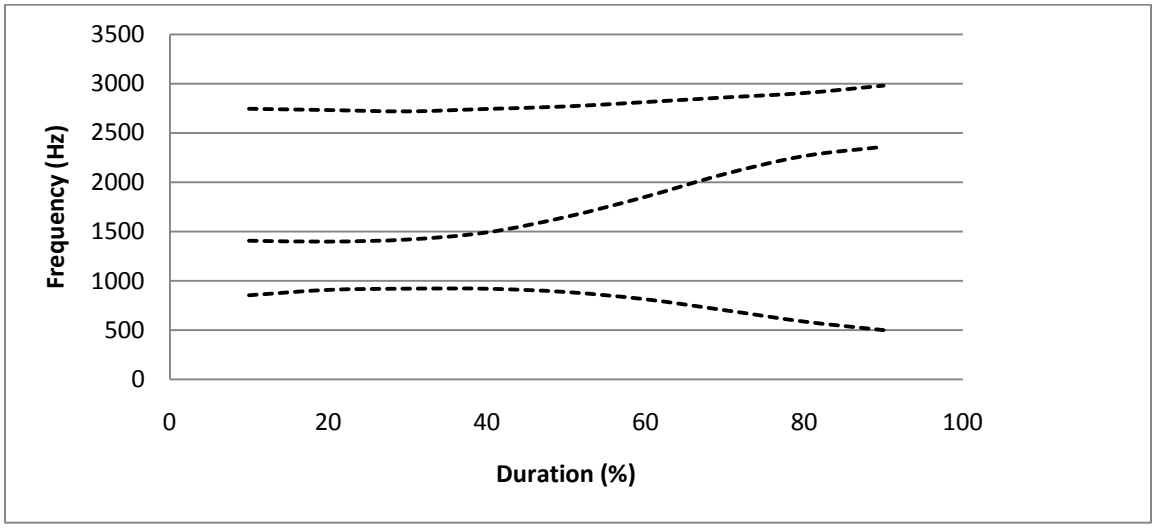
TABLE 4.2 STOP-SET MEAN FREQUENCY-WEIGHTED FORMANT FREQUENCIES

Vowel Duration	D-Set Formants (Hz)			T-Set Formants (Hz)		
	F1	F2	F3	F1	F2	F3
10%	854	1409	2745	785	1647	2802
20%	909	1400	2732	799	1773	2822
30%	921	1421	2719	761	1926	2853
40%	920	1493	2744	688	2105	2895
50%	887	1650	2769	597	2296	2914
60%	813	1854	2813	525	2438	2954
70%	703	2084	2860	470	2553	2989
80%	588	2266	2905	432	2612	3024
90%	502	2360	2980	404	2621	3040

Figure 4.1 displays the D-Set formant values from Table 4.2 as a formant graph as described in § 3.4.1.

34 The frequency-weighting method described here is an attempt to incorporate lexical frequency information into the spectral data, under the assumption that low-frequency items should exhibit more irregularity in production. The overall effect, when put into graph form as in Figure 4.1, is to "smooth out" the formants, which bears out this assumption.

FIGURE 4.1 D-SET FORMANTS, FREQUENCY-WEIGHTED



In Figure 4.1, there appear to be two distinct stages of formant movement during pre-voiced diphthongs – an initial mostly steady state lasting up to approximately 40 or 50% of vowel duration, and then a subsequent stage of formant movement. Consulting the corresponding data in Table 4.2 confirms that there is little change in any of the formant values prior to 50% of duration.

FIGURE 4.2 T-SET FORMANTS, FREQUENCY-WEIGHTED

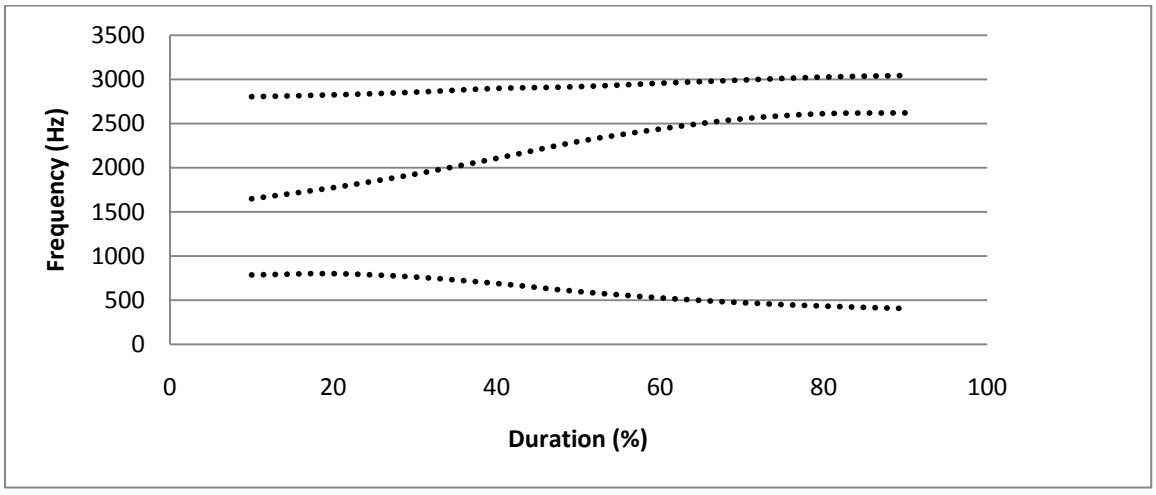


Figure 4.2 graphs the T-Set formant values from Table 4.2 as a formant graph. In contrast to Figure 4.1, it shows the characteristic CR pattern, with a lower initial F1 and

higher initial F2. Comparing the two sets of data in Table 4.2 shows that pre-voiceless diphthongs have movement across all three formants almost throughout the vowel duration, only slightly tapering off to a (brief) steady state in the final 10 or 20%. Recall from the discussion in § 2.1: "...if only one steady state was present, it was at the beginning of the diphthong for pre-/d/ /ai/ and at the end for pre-/t/ /ai/," (Thomas, 2000, p. 10). Although Thomas' study concerned non-Canadian speakers in Ohio, the data presented here indicate that similar results hold for Manitoba speakers. There is strong indication of a long initial steady state in the D-Set, and weak evidence[35] for a short final steady state in the T-Set.

Looking again at Table 4.2, there is a fairly close correspondence (especially for F2 and F3, albeit somewhat less close for F1) between the non-steady-state portions of each set's formant trajectories, depending on precisely where the steady state portion is demarcated; that is, a correspondence between the second stage of the D-Set vowel formants, from about the 50% mark, and the entirety of the T-Set vowel formants. This may be a little less clear in a strictly visual comparison of Figure 4.1 and Figure 4.2 because the T-Set formant trajectories are "stretched out" relative to the D-Set's second stage, but this is only because thus far the T-Set to the D-Set have only been compared in terms of relative vowel duration. By "relative vowel duration", it is meant that both Figure 4.1 and Figure 4.2 plot formant values over time measured only as a percentage of vowel duration, and not as an absolute numeric value. However, this

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35 The T-Set data indicates that a steady state may exist, possibly between 80% and 90% of vowel duration. However, since no data were collected beyond 90% it is uncertain whether such a steady state is maintained through to the final endpoint of the vowel. I am therefore reluctant to identify with any certainty the existence of a final steady state in the T-Set based on data representing only 10% of the total vowel duration.

method of comparison ignores the substantial real difference in vowel duration between the two groups. T-Set mean vowel duration (frequency-weighted) in the Manitoba data is 159 ms, while mean vowel duration for the D-Set is 295 ms – nearly twice as long. A more revealing comparison between the two sets can be made by taking this large durational difference into account.

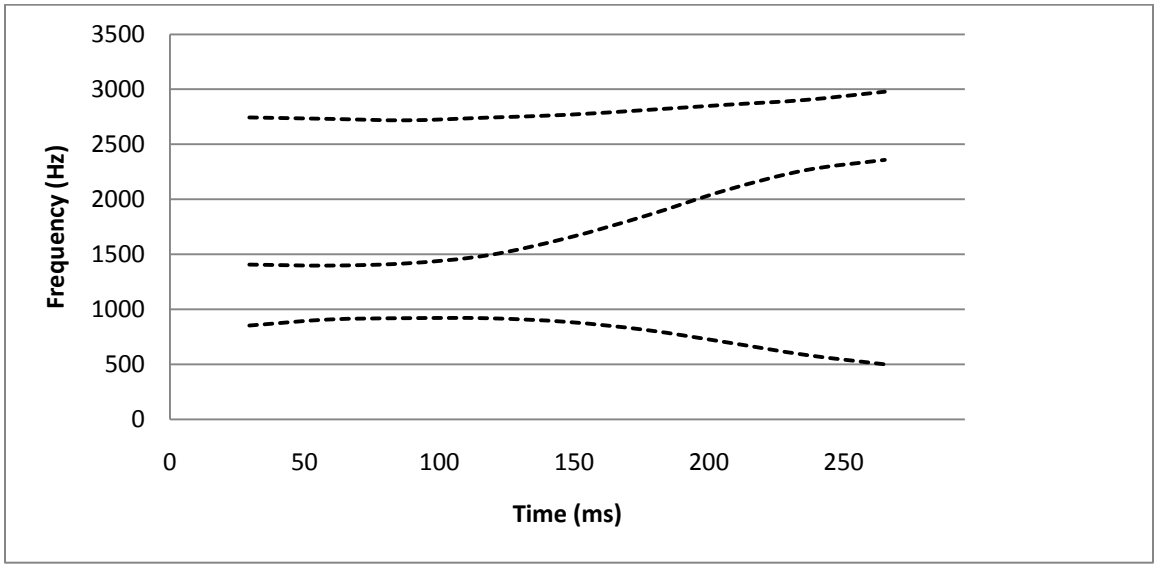
In order to incorporate the difference in duration between the two groups into our analysis, the relative (i.e. percentile) timepoints for each datapoint are converted into absolute timepoints, having numerical (non-percentile) time values. For the D-Set data, this is done by simply converting the percentile timepoints into numerical values based on the corresponding percentage of the D-Set vowel duration of 295 ms. Table 4.3 provides the actual time values in milliseconds for each D-Set timepoint, and Figure 4.3 then plots the D-Set formant values against these calculated values:

TABLE 4.3 D-SET TIMEPOINTS

Relative Timepoint	10%	20%	30%	40%	50%	60%	70%	80%	90%
Absolute Timepoint[36]	29	59	88	118	147	177	206	236	265

36 All numeric durational time values (i.e. non-percentile) are given in milliseconds (ms) unless otherwise specified.

FIGURE 4.3 D-SET FORMANTS, ABSOLUTE TIMEPOINTS



If we compare Figure 4.3 with Figure 4.1, which plots the same formant data against relative (percentile) time values, nothing new appears to have been revealed by this method. However, the use of numeric time values provides a means of realigning the two datasets to each other linearly.

At this point it is worth incorporating some of the insights of Articulatory Phonology into the analysis. Recall from Browman and Goldstein's discussion of vowel-to-consonant alignment from § 2.3: "postvocalic consonants are organized on the basis of their sequential relation to the vowel ... with respect to their left edges (achievement of target)," (Browman & Goldstein, 1988, p. 148). This suggests that the point of alignment for our analysis should be the vocalic *end*point (achievement of target in AP terms), an hypothesis which is also supported by the correspondence between the T-Set formant paths with the *latter* half of the D-Set formant paths. We will return to a discussion of the findings in AP terms at the end of this section.

In order to align the two sets of formants within a common timeframe, absolute timepoints with numerical values must also be calculated for the T-Set, as for the D-Set. Table 4.4 provides the T-Set timepoints calculated as percentages of the T-Set duration, 159 ms:

TABLE 4.4 T-SET TIMEPOINTS

Percentile Timepoint	10%	20%	30%	40%	50%	60%	70%	80%	90%
Absolute Timepoint	16	32	48	64	80	95	111	127	143

In order to align the two sets of data at the vocalic endpoint, the T-Set timepoints must be recalibrated with respect to the D-Set mean duration of 295 ms. Each T-Set timepoint will be offset by the difference between the two durations, so as to calculate each timepoint's position relative to the end of the vowel. Recall that the vowel durations are 295 ms for the D-Set and 159 ms for the T-Set, a total difference of 136 ms. Table 4.5 lists the recalibrated, or *duration-adjusted* T-Set timepoints:

TABLE 4.5 T-SET TIMEPOINTS, DURATION-ADJUSTED

Percentile Timepoint	10%	20%	30%	40%	50%	60%	70%	80%	90%
Absolute Timepoint	152	168	184	200	216	231	247	263	279

Figure 4.4 then plots the T-Set data against the duration-adjusted timepoints:

FIGURE 4.4 T-SET FORMANTS, ABSOLUTE TIMEPOINTS, DURATION-ADJUSTED

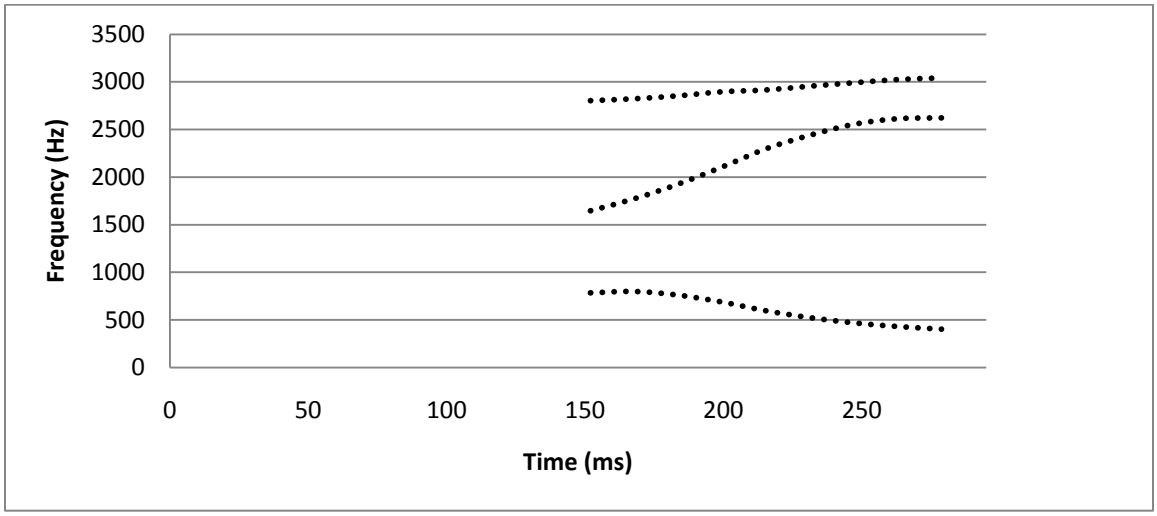
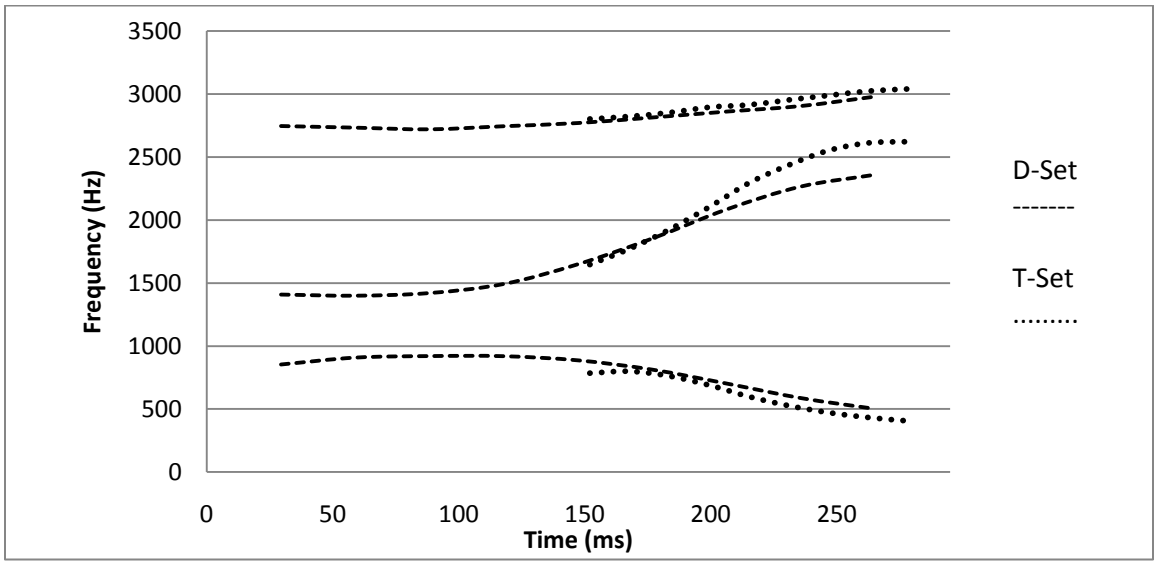


Figure 4.3 and Figure 4.4 now present the two component sets of the Stop-Set graphed over both a common timeframe *and* a common point of alignment. This allows the two sets of formant trajectories to be superimposed for visual comparison, as displayed in Figure 4.5:

FIGURE 4.5 STOP-SET FORMANTS



By means of the realignment method described above, the commonalities in formant trajectories shared between the two sets become more apparent. F1 and F3,

especially, can be seen to follow considerably similar trajectories. T-Set F2, however, does show a notably steeper slope as well as a higher ultimate frequency than for the D-Set.

The explanatory value of converting the relative timepoints to absolute time values, and aligning the timepoints for both sets from the vocalic endpoint, can be made more explicit by making a comparison of formant values between the two sets, using both methods of timepoint calculation. First, Table 4.6 compares the formant values of the two sets at the 50% (relative) timepoint (values taken from the full list in Table 4.2):

TABLE 4.6 STOP-SET RELATIVE TIMEPOINT FORMANTS

	Formant Frequencies (Hz)		
	F1	F2	F3
D-Set (50%)	887	1650	2769
T-Set (50%)	597	2296	2914
Difference	**290**	**-646**	**-145**

To compare absolute time values, we will maintain the 50% timepoint for the D-Set, which is converted to a 147ms timepoint (see Table 4.3 for D-Set timepoint conversions). The closest T-Set absolute timepoint (see Table 4.5) is at 152 ms. Table 4.7 compares formant frequencies of the two sets between these very close absolute timepoints:

TABLE 4.7 STOP-SET ABSOLUTE TIMEPOINT FORMANTS

	Formant Frequencies (Hz)		
	F1	F2	F3
D-Set (147 ms)	887	1650	2769
T-Set (152 ms)	785	1647	2802
Difference	**102**	**3**	**-33**

Comparing Table 4.6 with Table 4.7, it is striking how much more reduced the differences in formant values become when comparing absolute timepoints to relative timepoints. This is true no matter where along the timeline the comparison is made, with the exception that F2 differences towards the end of the vowel remain higher between the two sets.

In terms of the AP model, we must now determine the best description of gestural timing which can account for the durational difference between the D-Set and T-Set diphthong variants, as well as the common formant trajectory path as exhibited in Figure 4.5, above[37]. Recall that AP provides two means of adjusting gestural timing: phasing and stiffness. As a diphthong, which by definition contains articulatory movement, /aɪ/ necessarily involves at least two gestures which are coordinated in some manner. We may assume for the sake of discussion that the gestures involved are roughly equivalent to those for the monophthongs /a/ and /ɪ/[38]. In the case of the D-Set variant, a steady state comprises roughly half of the vowel duration, followed by a transitional state indicating articulatory movement to a higher (low F1) and fronter (high F2) tongue position. This indicates that the two gestures comprising the diphthong each occur over roughly equal spans of time. In terms of their gestural coordination, we may describe their relationship as essentially sequential[39]. In

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37 For the time being, I will ignore the discrepancy in the latter portion of the F2 slope and its ultimate frequency in the T-Set as compared to D-Set F2.

38 It is not my concern here to establish a precise characterization of the gestures involved, nor their equivalence (or otherwise) to the monophthongs.

39 Phase relationships in AP are indicated using the following schema: *a* (*x*) = = *b* (*y*). Here, *a* and *b* are the gestures or gestural constellations holding a phase relationship, while *x* and *y* are the respective phase degrees which coincide. 240 degrees is the *achievement of target* for a gesture, and is usually where a subsequent gesture begins its phase cycle. Two gestures in sequence, as the gestures here are, would thus ordinarily be formulated as: a(240) = = b(0). However, a precise description of the phase

comparison, the T-Set variant is notably shorter and its formant path is comparable to the *second half* of the D-Set variant. Assuming that the gestures involved in each variant are the same, we must explain the difference in terms of a different gestural relationship for the T-Set than for the D-Set – that is, the underlying gesture(s) seem to occur at the same rate, and over the same range, differing only in their timing with respect to the end of the release of the onset consonant.

AP provides two means of adjusting gestural timing: stiffness, and phasing. In terms of the CR variants, and assuming the same underlying gestures for both, we must consider the differing effects of stiffness vs. phasing. A difference in stiffness between the two variants would change the rate of gestural movement. However, as the visible portion of the T-Set variant essentially moves at the same rate and over the same range as the second half of the D-Set variant, the difference cannot be one of stiffness.

The only other means of modifying the gestural timing between the two CR diphthong variants involves phasing. As discussed above, the two variants maintain a common alignment point at the vocalic endpoint, where the subsequent consonant begins – this has been justified both in terms of the formant path revealed by the data, as well as by the general AP principle of aligning vowels to coda consonants. Although the data collection method used for this thesis does not provide enough information to determine the specifics of the phasing relationship, it does appear that the difference between the two CR variants can be described in terms of gestural phasing. A change in phasing, in contrast with a change in stiffness, is consistent with the observed pattern –

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relationship would require more accurate data involving physical measurement of the articulators involved, which is not available for this study.

the parallels seen between the second portion of the D-Set and the entirety of the T-Set.

To carry forward into a discussion of the R-Set data, we now have two established characteristics of Manitoba CR, as well as some methodology grounded in the AP framework allowing comparison of different diphthong variants. The first established characterisic of CR is the large durational difference between the two variants of the diphthong /aɪ/, with the pre-voiceless *raised* version being roughly 50% of the duration of the pre-voiced *unraised* version. This was certainly to be expected based on reviewing the existing literature on CR and English vowels in general. § 2.1 discussed research by Thomas (2000), Moreton (2004), et al, indicating that vowel duration is a strong cue to final-consonant voicing for English diphthongs (those involved in CR). However, the application of vowel duration data in combination with a common vowel endpoint alignment (within an AP model or otherwise) has not been used in any analysis of CR that this author has encountered.

As a second characteristic of Manitoba CR, we have also now established that the pre-voiceless CR diphthong second formant (F2) has both a steeper slope, and higher ultimate frequency, than the pre-voiced diphthong. In § 2.1 reference was made to Moreton's discovery "that F_2 (not hitherto identified as a voicing cue) is a stronger voicing cue ... than F_1," (Moreton, 2004, p. 24). The results discussed here thus confirm Moreton's finding, that F2 is related to post-vocalic voicing.

4.2 R-Set

R-final (R-Set) vowel formants are analyzed in this section according to the same methods as discussed for Stop-Set tokens in § 4.1, allowing for direct comparison

between the two groups. Within the R-Set internally, the functions of morphological complexity and lexical frequency will also be investigated in more detail, as discussed in §2.2 and §4.1. The endpoint-alignment method, based on the AP analysis of the Stop-Set data in § 4.1, will be used to compare variations of the diphthong found within the R-Set. The roles that these factors play in affecting gestural timing in AP terms, and thus determing vowel duration, will be summarized at the end of the section.

4.2.1 Formants

Before beginning our discussion of the results, a short review of the method used to demarcate R-Set diphthongs is in order. Recall from § 3.4.2 that a vowel preceding /ɹ/ does not offer an easily identifiable point of transition. Instead, the vowel, or rather the spectral formants, seamlessly move from the vowel into /ɹ/ over an extended period of time. The point which was used in this research to mark the transition was the point at which F2, having reached a plateau of some duration, initiated a slow decline which continues into the following /ɹ/. However, we should note that this choice of indicator is necessarily somewhat arbitrary. The problem with identifying the transition from vowel to /ɹ/ is tied to the characteristic formants of /ɹ/, which have been discussed previously. Characteristically, both F3 and F2 exhibit markedly low frequencies for /ɹ/, making it difficult to accurately quanitify a frequency value for F2 due to the strong downward influence of F3. These downward-moving trends in both F2 and F3 do not appear in spectral analysis as discrete points of transition, but rather as spread-out zones of transition. While nonetheless clearly identifiable as characteristic of /ɹ/, we cannot find the kind of sharply delineated transitions such as found with an /f/ or /d/, for example. This is a problem in general

for acoustic research involving comparisions of /ɹ/ with other consonants, in that identification of the vowel offset before /ɹ/ can never be as precisely delineated as it can be for other consonants.

To set the stage for the discussion to follow, the R-Set data must first be placed into context with the Stop-Set data. As with the Stop-Set formants, the R-Set formants are adjusted by weighting each token's datapoints according to the same lexical frequency-based multiplier formula discussed in § 4.1. The resulting values for the R-Set as a whole are listed in Table 4.8:

TABLE 4.8 R-SET MEAN FREQUENCY-WEIGHTED FORMANT FREQUENCIES

Vowel Duration	R-Set Formants (Hz)		
	F1	F2	F3
10%	853	1452	2748
20%	905	1471	2708
30%	910	1535	2698
40%	881	1660	2709
50%	820	1802	2717
60%	741	1955	2723
70%	669	2056	2711
80%	616	2101	2671
90%	584	2051	2578

Recall from § 4.1 that the mean T-Set vowel duration is 159 ms and the mean D-Set duration is 295 ms; summed together, the mean combined Stop-Set duration is 227 ms. Overall R-Set mean duration is 216 ms. This value falls in between the values for the T-Set and D-Set, and fairly close to the mean duration for the Stop-Set as a whole. During the discussion in § 4.1 it was established that duration is one of the key characteristics of Manitoba CR. As the overall R-Set duration thus is not clearly categorized with either the T-Set or the D-Set; it cannot be described on the basis of vowel duration as either characteristically *raised* or *unraised*. The other fundamental CR characteristic

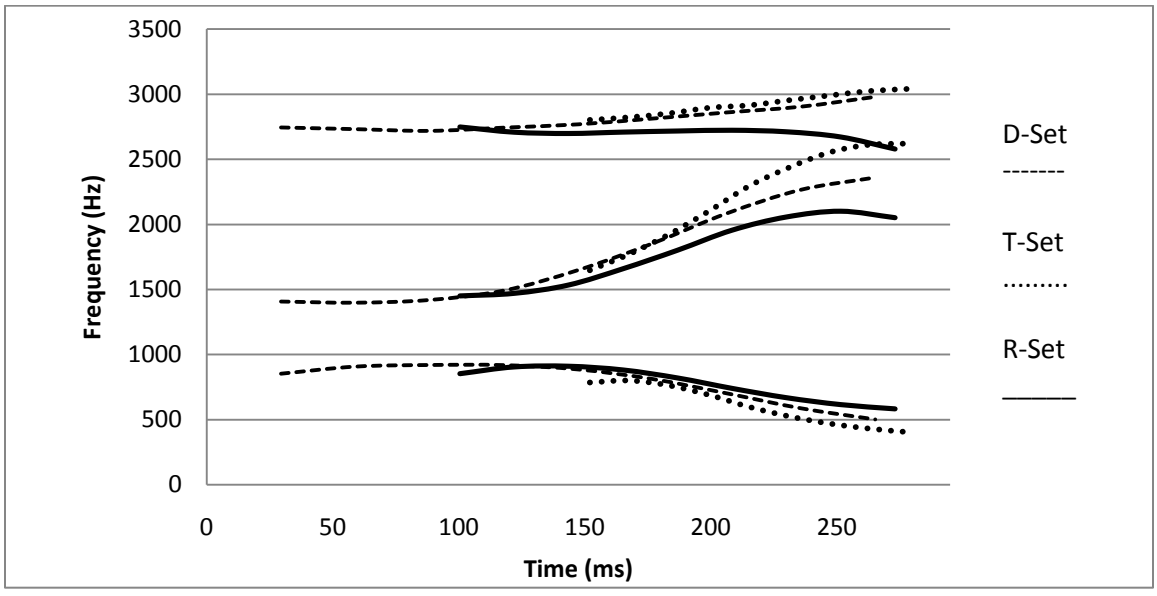
established in § 4.1 is a high F2 frequency value. In order to compare F2 (and other formant) trajectories, the R-Set relative timepoints need to be converted to absolute time values as was done for the T-Set in § 4.1, allowing the R-Set formant datapoints to be aligned from a common position, the D-Set vocalic endpoint. Table 4.9 lists the numeric timepoints calculated for the R-Set:

TABLE 4.9 R-SET TIMEPOINTS, DURATION-ADJUSTED

Percentile Timepoint	10%	20%	30%	40%	50%	60%	70%	80%	90%
Absolute Timepoint	101	122	144	165	187	208	230	252	273

The R-Set formants in Table 4.8 can now be plotted against the timepoints listed in Table 4.9. Figure 4.6 adds the R-Set data to the Stop-Set data previously presented in Figure 4.5 (§ 4.1):

FIGURE 4.6 STOP-SET AND R-SET FORMANTS



In Figure 4.6, the R-Set is distinguished from the T-Set and D-Set by its relatively *low* F2 and F3 values – in fact, both F2 and F3 display notable declines towards the end of the vowel. These facts are unsurprising taking into account the acoustic

characteristics of /ɹ/. Recalling from Hagiwara, initially cited in § 3.4.2: "typically, the F3 in an /r/ allophone can be expected to be roughly 60-70% of neutral, with certain exceptions," (Hagiwara, 1995, p. 121). Although the Manitoba speaker data collected here did not include a range of vowel phonemes as that study did, thus disallowing the calculation of neutral formant values for Manitoba speakers, we can nonetheless expect /ɹ/ to exhibit a decline in F3 from the preceding high vowel (the end portion of the diphthong /aɪ/), which is clearly observed in comparison to the final F3 values reached for the D-Set and T-Set in Figure 4.6. Hagiwara's speakers exhibited a significantly lower F3 for /ɹ/ (including syllabic /ɻ̩/) than for any other vowels (Hagiwara, 1995, pp. 41-52), consistent with what is shown in Figure 4.6. Hagiwara also discusses the second formant of /ɹ/: "F2, was not always 'steady' at the time of the F3 minimum, instead seeming to move from a frequency 'set' by the preceding vowel toward a frequency required by the following context ... This suggests that F2 is unspecified for a particular frequency 'target'," (Hagiwara, 1995, p. 71). Given an unspecified F2 for /ɹ/, the decline in vocalic F2 exhibited in Figure 4.6 can be explained in relation to the decline of F3, even if F2 is indeed unspecified for the following /ɹ/. As F3 declines, F2 is necessarily 'pushed' down as well. Figure 4.6 only displays the *vowel* formants and not the spectral data or formants of the following consonant[40], but the trend for R-Set vocalic F2 and F3 to continue their descent into the following /ɹ/ seems clear.

40 But, see the discussion at the beginning of this section regarding the inherent problems in marking the vowel-to-/ɹ/ transition point.

4.2.2 Duration Effects

As discussed in § 2.2, an investigation of the functions of morphological complexity and lexical frequency in relation to CR occurrence within the R-Set, is one of the purposes of this thesis. This section will discuss the statistical relationships between these two factors and the characteristics of Manitoba CR which we have already established – vowel duration, and F2 slope and height (see discussion in § 2.1 and § 4.1).

In order to investigate whether morphological complexity plays a role in CR occurrence for R-Set words, we must subdivide the R-Set according to the number of morphemes contained in each word. Table 4.10 displays the R-Set data divided according to morpheme count, with monomorphs (hereafter, R1) on the left and bimorphs (R2) on the right, along with their lexical frequencies, determined in the same manner as for the Stop-Set (see § 4.1):

Table 4.10 R-Set Lexical Frequency by Word

R1	Hits	Log(Hits)
fire	84,570	4.94
wire	16,124	4.21
hire	11,477	4.01
tire	7,805	3.89
dire	3,425	3.53
sire	739	2.87
shire	431	2.63
mire	389	2.59
lyre	228	2.36
Mean		**3.49**

R2	Hits	Log(Hits)
higher	86,409	4.94
liar	3,301	3.52
dyer	1,066	3.03
myer	245	2.39
shyer	61	1.79
sigher	7	0.85
fie-er	0	-[41]
whyer	0	-
tie-er	0	-
Mean		**2.72**

The (frequency-weighted) durations differ somewhat between the two groups, although much less than between the D-Set and T-Set – R1 mean duration is 208ms,

41 Log(0) cannot be calculated; formant values for words with a frequency of zero are therefore simply omitted in calculating mean formant values for the R-Set.

while R2 mean duration is 233ms. The methods described in § 4.1, calculating absolute numeric time values for the T-Set timepoints as a percentage of vowel duration and adjusting those values to align the T-Set vocalic endpoint with the D-Set endpoint, can now be applied to the R-Set data. Table 4.11 lists the formant frequencies for R1 and R2 at each percentile timepoint, Table 4.12 provides the duration-adjusted timepoints for the two sub-groups, and Figure 4.7 plots the mean formant values against the adjusted timepoints:

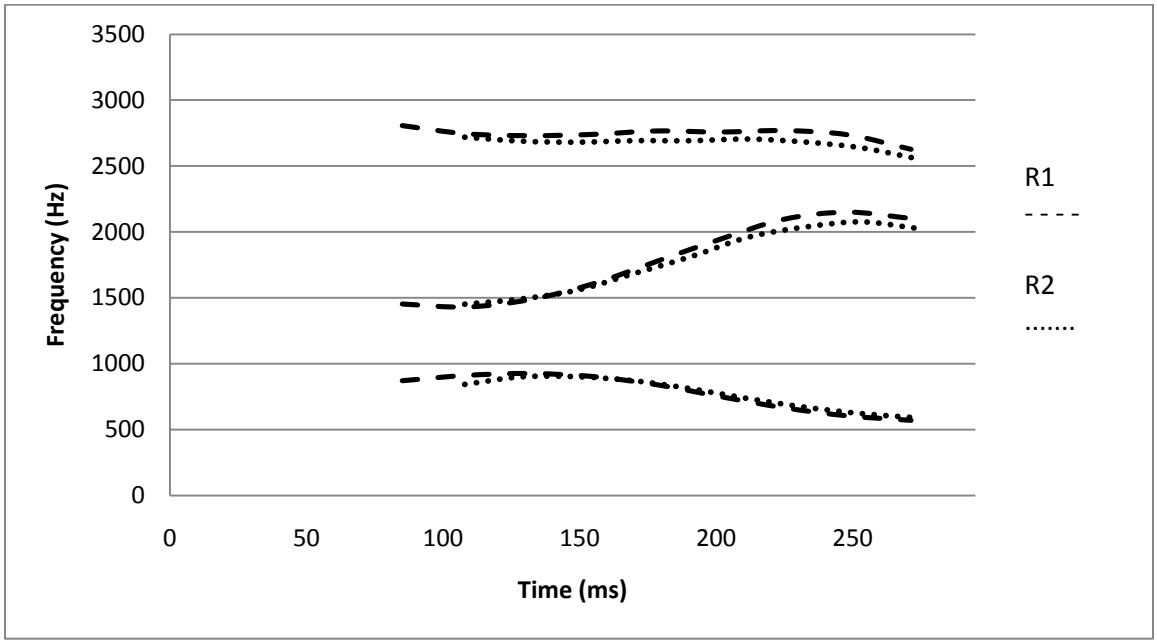
TABLE 4.11 R-SET MEAN FREQUENCY-WEIGHTED FORMANT FREQUENCIES

Vowel Duration	R1 Formants (Hz)			R2 Formants (Hz)		
	F1	F2	F3	F1	F2	F3
10%	844	1451	2720	871	1453	2807
20%	901	1491	2690	912	1431	2745
30%	902	1559	2682	926	1486	2731
40%	871	1686	2693	903	1606	2740
50%	810	1814	2693	841	1776	2766
60%	736	1960	2706	751	1944	2758
70%	671	2038	2683	666	2095	2769
80%	622	2077	2639	604	2149	2738
90%	590	2027	2554	570	2101	2628

TABLE 4.12 R-SET TIMEPOINTS, DURATION-ADJUSTED

Percentile Timepoint		10%	20%	30%	40%	50%	60%	70%	80%	90%
Absolute Timepoints	*R1*	108	129	149	170	191	212	232	253	274
	R2	85	108	132	155	178	202	225	248	271

FIGURE 4.7 R-SET FORMANTS



The data suggest that R1 and R2 do differ in some respects, although much less than the D-Set and the T-Set differ from each other. The most noticeable between-group difference is their mean durations. Table 4.13 displays the mean vowel durations for all the sets and sub-sets:

TABLE 4.13 MEAN DURATION OF ALL SETS

Set		Mean Duration
Stop-Set	*D-Set*	295
	T-Set	159
R-Set	*R1*	208
	R2	233

The correspondence between vowel duration and CR occurrence for the Stop-Set is already known (see § 2.1), but we can also examine their statistical relationship based on the data in Table 4.13. Since post-vocalic consonant voicing is the determining factor in the durational difference seen between the D-Set and T-Set, we can test the data with a statistical model to see how well duration is predicted by the voicing

quality of the final consonant, in preparation for using the same test to look at the R-Set data. Examining the Stop-Set durations through a Least Squares Test does reveal a strong statistical relationship[42]; the results are summarized in Table 4.14:

TABLE 4.14 LEAST SQUARES TEST: STOP-SET VOWEL DURATION AS PREDICTED BY POST-VOCALIC CONSONANT VOICING

Least Squares	R^2	0.764
	p	<.0001
	Df	1
D-Set	Mean Duration	295
	Std Error	2.6
T-Set	Mean Duration	159
	Std Error	2.6

An R^2 value approaching either 1 (positive correlation) or -1 (negative correlation) indicates a strong level of prediction from one variable to the other. In this case, the R^2 value of 0.764 indicates a high level of predictability of duration based on post-vocalic voicing. The low *p* value here indicates that the results of this test are highly significant, in the statistical sense. In other words, most of the variation seen between the T-Set and the D-Set is strongly predicted by and can be attributed almost solely to post-vocalic consonant voicing quality. This statistical comparison agrees with what has already been established regarding the connection between vowel duration and CR, indicating its suitability as a statistical test for the corresponding R-Set data.

Within the R-Set, the relationship between vowel duration and morphological complexity can now be analyzed with a Least Squares Test, to determine whether R-Set

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42 It should be noted that the tests used here do not account for repeated measures. The type of study done here (small sample size, limited number of suitable lexical items) necessitates a number of tokens from each speaker for each lexical item. Future research should consider these problems in the design phase.

vowel duration is similarly predictable based on the number of morphemes within a word:

TABLE 4.15 LEAST SQUARES TEST: R-SET VOWEL DURATION AS PREDICTED BY MORPHOLOGICAL COMPLEXITY

Least Squares	R^2	0.086
	p	<.0001
	Df	1
R1 (Set)	Mean Duration	208
	Std Error	2.5
R2 (Set)	Mean Duration	233
	Std Error	2.6

The results of the Table 4.15 indicate that there is only very weak positive correlation between R-Set vowel duration and morphological complexity, as R^2 has the very low value of 0.086. Most of the deviation from the mean duration is thus non-attributable to differences in morphological complexity. However, the low *p* value indicates that the variation which *is* attributable to morphological complexity is nonetheless real, and non-attributable to other factors. So, a small degree of durational difference between monomorphemic and bimorphemic pre-/ɹ/ vowels is established by this test.

These results in and of themselves are not particularly impressive, and on their own do not strongly justify sub-dividing the R-Set on the basis of morphological complexity, nor do they establish a strong role for morphological complexity in relation to CR. However, the results of the statistical analysis still suggest that there may be some merit to examining morphological complexity's role further. Recall from § 3.3.1 that R-Set words were selected so as to form minimal pairs differing in morpheme count. Looking a little more closely at the relationships between these pairs

one-by-one reveals that not all pairs show the same statistical results regarding the relationship between morphemes and vowel duration. Table 4.16 lists the results of a Least Squares Test on each minimal pair (Degrees of Freedom are omitted, but equal 1 in each case):

TABLE 4.16 LEAST SQUARES TEST: R-SET VOWEL DURATION AS PREDICTED BY MORPHOLOGICAL COMPLEXITY, MINIMAL PAIRS

Minimal Pair		Least Squares Test	
dire – dyer		R^2	0.345
		p	0.2207
	dire	Mean Duration	219
		Std Error	10.3
	dyer	Mean Duration	255
		Std Error	23.0
fire – fie-er		R^2	0.139
		p	0.0116
	fire	Mean Duration	205
		Std Error	7.0
	fie-er	Mean Duration	232
		Std Error	7.5
hire – higher		R^2	0.243
		p	0.0004
	hire	Mean Duration	194
		Std Error	5.5
	higher	Mean Duration	224
		Std Error	5.7
lyre – liar		R^2	0.0498
		p	0.1453
	lyre	Mean Duration	219
		Std Error	8.5
	liar	Mean Duration	239
		Std Error	7.2
mire – myer		R^2	0.0039
		p	0.6939
	mire	Mean Duration	233
		Std Error	7.9
	myer	Mean Duration	237
		Std Error	7.9

Minimal Pair		Least Squares Test	
shire – shyer		R^2	0.0061
		p	0.6104
	shire	Mean Duration	229
		Std Error	6.9
	shyer	Mean Duration	233
		Std Error	6.8
sire – sigher		R^2	0.0963
		p	0.038
	sire	Mean Duration	223
		Std Error	6.9
	sigher	Mean Duration	244
		Std Error	7.0
tire – tie-er		R^2	0.0741
		p	0.0812
	tire	Mean Duration	185
		Std Error	4.4
	tie-er	Mean Duration	197
		Std Error	5.1
wire – whyer		R^2	0.369
		p	<.0001
	wire	Mean Duration	201
		Std Error	6.1
	whyer	Mean Duration	245
		Std Error	7.6

Table 4.16 lists each minimal pair in turn with the results of a Least Squares Test conducted for all tokens of that pair alone (i.e. no other R-Set words), relating duration to the number of morphemes in the word – monomorphs are listed first for each pair. Within these results, there are many pairs which show very little, or very poor evidence of a statistical relationship between the two variables. There are a number of pairs which have a very low R^2 value below 0.05, such as *lyre – liar, mire – myer, shire – shyer, sire – sigher, and tire – tie-er*, indicating that most of the variability in duration cannot be attributed to morpheme count. The pair *dire - dyer*, while having a relatively high R^2 value of 0.345, has a very high *p* value and thus is statistically insignificant – most of the variation between the two cannot be attributed solely to morpheme count. Only three minimal pairs within the entire R-Set have both relatively high R^2 values as well as low *p* values: *fire – fie-er, hire – higher*, and *wire – whyer*. These three pairs also have some of the lowest mean durations among the monomorphs[43]. Taking the data from this limited set of more statistically significant minimal pairs (SSMPs) and running a Least Squares Test again reveals a stronger correlation between duration and morphological complexity, as summarized in Table 4.17:

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43 It is worth noting that the lowest mean duration amongst all the pairs, 185 ms, is for the monomorph *tire*. However, its bimorph counterpart *tie-er* also has an extremely low mean duration of 197 ms, which is lower than almost all of the monomorphs, and *much* lower than any of the other bimorphs. This leads me to suspect that one of two things was happening during the data collection process. Either: a) people were simply reading *tie-er* as *tire*, and pronouncing them nearly identically; or b) the form *tie-er* is probably a nonce word for most speakers, leading people to attempt a pronunciation approximating the closest real word in their lexicon, *tire*. In either case, the data for the *tire – tie-er* minimal pair is somewhat suspect, and for this reason I have excluded it from the set of "statistically significant minimal pairs".

TABLE 4.17 LEAST SQUARES TEST: R-SET VOWEL DURATION AS PREDICTED BY MORPHOLOGICAL COMPLEXITY, STATISTICALLY SIGNIFICANT MINIMAL PAIRS

Least Squares	R^2	0.218
	p	<.0001
	Df	1
R1 (Limited Set)	Mean Duration	200
	Std Error	3.6
R2 (Limited Set)	Mean Duration	232
	Std Error	4.0

Within this limited set of SSMPs, the Least Squares Test gives an R^2 value of 0.218. This is still low and thus indicates that much of the variation around the mean duration within each subset (R1 and R2, limited sets) is not predictable from the morphological complexity of a given form – but for the SSMPs it is much more predictive than for the R-Set as a whole, where the R^2 value is only 0.086 (see Table 4.15, above).

Having now re-examined the SSMP subset of the R-Set data on the basis of a pair-by-pair comparison, we may also consider the use of lexical frequency as the basis for a second re-examination of the data. Table 4.10 at the beginning of this section listed the lexical frequency information for each word in the R-Set – it is presented here again as Table 4.18:

TABLE 4.18 R-SET LEXICAL FREQUENCY BY WORD

R1	Hits	Log(Hits)
fire	84,570	4.94
wire	16,124	4.21
hire	11,477	4.01
tire	7,805	3.89
dire	3,425	3.53
sire	739	2.87
shire	431	2.63
mire	389	2.59
lyre	228	2.36
Mean		**3.49**

R2	Hits	Log(Hits)
higher	86,409	4.94
liar	3,301	3.52
dyer	1,066	3.03
myer	245	2.39
shyer	61	1.79
sigher	7	0.85
fie-er	0	-
whyer	0	-
tie-er	0	-
Mean		**2.72**

The mean frequencies in Log(Hits) for the two R-Set subsets given in Table 4.18 are 3.49 for R1 and 2.72 for R2; summed together, these give a mean frequency for the overall R-Set of 3.105. On this basis, there are seven individual words in the R-Set that have an above-average frequency: fire (4.94), higher (4.94), wire (4.21), hire (4.01), tire (3.89), dire (3.53), and liar (3.52). Excluding the other eleven words as below-average in frequency, we can run a Least Squares Test on this restricted set of R-Set high-frequency words (HFWs). The results are given in Table 4.19:

TABLE 4.19 LEAST SQUARES TEST: R-SET VOWEL DURATION AS PREDICTED BY MORPHOLOGICAL COMPLEXITY, HIGH-FREQUENCY WORDS

Least Squares	R^2	0.252
	P	<.0001
	Df	1
R1 (Limited Set)	Mean Duration	197
	Std Error	2.8
R2 (Limited Set)	Mean Duration	232
	Std Error	4.1

The results here are similar to those for the SSMPs, the HFWs showing a slightly greater relationship between vowel duration and morphological complexity (compare $R^2 = 0.252$ for HFWs vs. $R^2 = 0.218$ for SSMPs).

It should be noted that the examination of restricted data (SSMPs and HFWs) is quite speculative, and the method described here is not very rigorous. Although there are indications of some effects on duration related to morphological complexity, a more detailed examination within a more rigorous theroetical framework cannot be carried out here.

The analysis presented in this section indicates that a number of inter-related factors are at work in determining duration in R-Set diphthongs. The first of these,

complex morphology, has a small influence on increased vowel duration. Lexical frequency appears to play a somewhat stronger role. In terms of AP and gestural timing, we may apply the same analysis as discussed in § 4.1 for the Stop-Set. The details will not be explored again here – the same diphthong being involved, we may assume that the same gestural analysis holds. What has been newly established in this subsection, is that there is an identifiable role for such factors as morphological complexity and lexical frequency. These factors do not play absolute roles; specifically, they do not appear to categorize R-Set words as either *raised* or *unraised* in the CR sense. Rather, they may influence gestural timing *in the direction* of either raising or non-raising. In many cases, their role appears to be rather insignificant, with the result that many R-Set diphthongs are phonetically intermediate between canonical *raised* and *unraised* diphthongs. But, in a few specific cases these factors may conspire to a greater effect.

In lexical terms, most of the minimal pairs comprising the R-Set are imbalanced – one of the words in the pair is usually much more frequent than the other, and for a significant number of pairs one member is a nonce word exhibiting a zero frequency rating according to the corpora databases consulted. Of all the R-Set minimal pairs, only the pair *hire – higher* can be said to have comparable lexical frequency ratings for both items forming the pair. Table 4.20, Table 4.21, and Figure 4.8 present the formant and timepoint data for the pair *hire – higher* alone (based on the recorded duration values from Table 4.16, 194ms for *hire* and 224ms for *higher*):

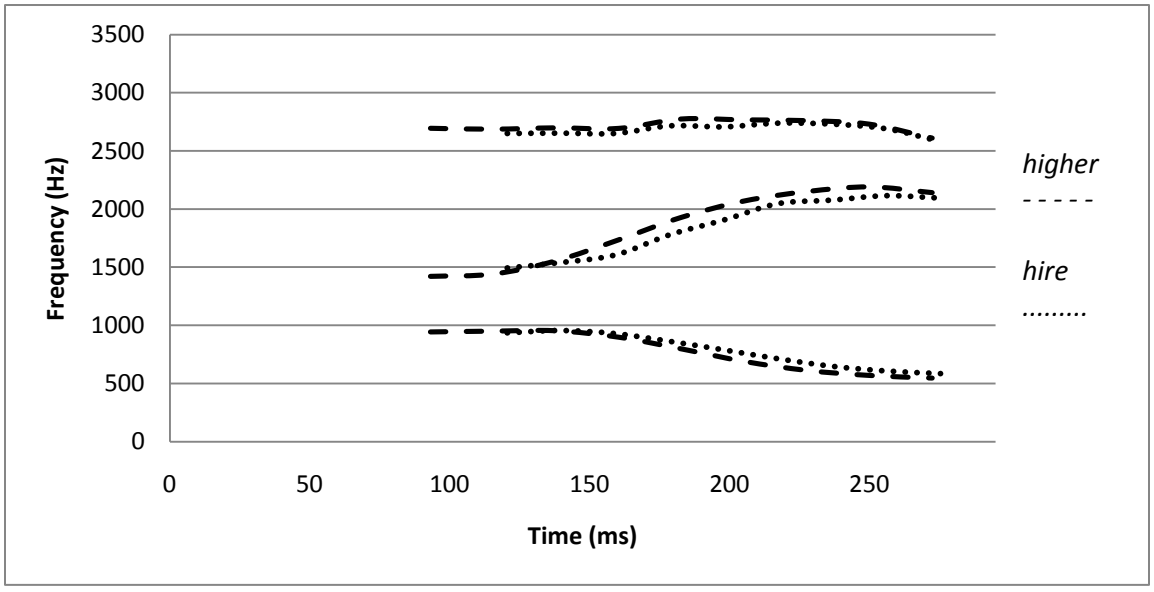
TABLE 4.20 'HIRE' AND 'HIGHER', MEAN FREQUENCY-WEIGHTED FORMANT FREQUENCIES

Vowel Duration	*hire* - Formants (Hz)			*higher* - Formants (Hz)		
	F1	F2	F3	F1	F2	F3
10%	936	1494	2649	942	1421	2694
20%	956	1542	2651	949	1441	2687
30%	929	1607	2649	952	1555	2698
40%	863	1780	2714	897	1735	2693
50%	789	1907	2705	797	1928	2774
60%	713	2048	2737	690	2069	2767
70%	648	2078	2729	613	2150	2760
80%	608	2116	2689	570	2190	2730
90%	586	2095	2579	548	2141	2610

TABLE 4.21 'HIRE' AND 'HIGHER', TIMEPOINTS, DURATION-ADJUSTED

Percentile Timepoint		10%	20%	30%	40%	50%	60%	70%	80%	90%
Absolute Timepoints	*hire*	121	140	159	179	198	217	237	256	275
	higher	93	116	138	160	183	205	228	250	272

FIGURE 4.8 'HIRE' AND 'HIGHER', FORMANTS



The differences seen here are not as great as those seen in the Stop-Set data, where we have the 'classic' CR *raised* and *unraised* diphthongs. However, the differences between *hire* and *higher* are greater than for any other R-Set pair. Moreover, the two

words differ in morphological complexity (unlike the Stop-Set minimal pairs), and are both relatively high-frequency words (unlike the other R-Set minimal pairs).

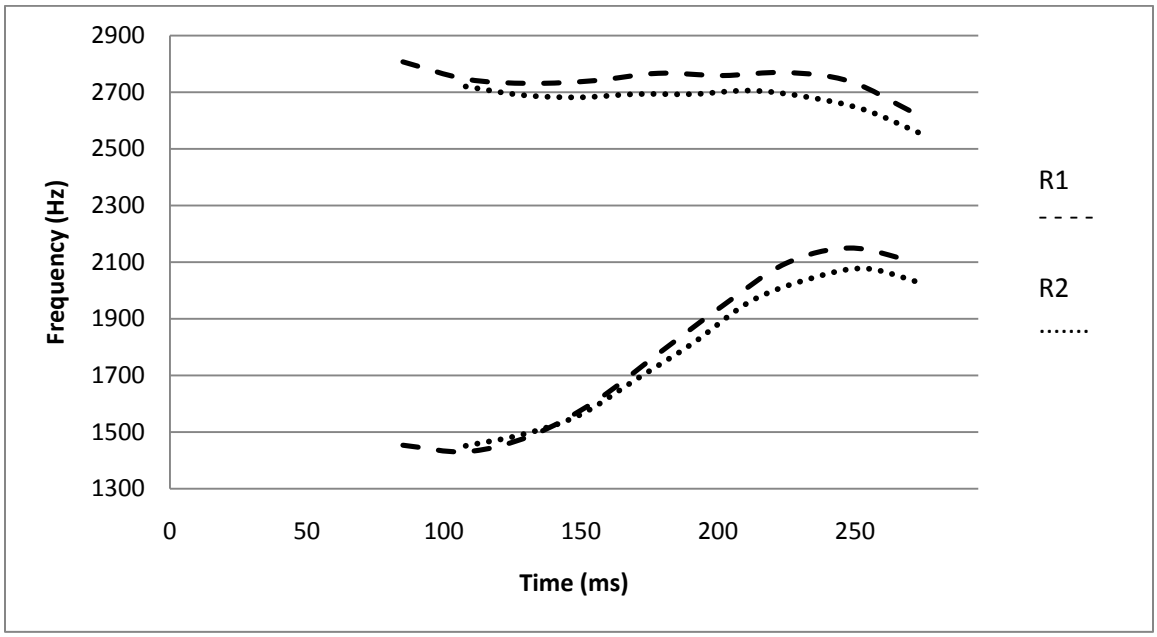
Bybee (2001, 2002 et al) has discussed lexical frequency as a factor in gradual phonological change, and has suggested that there is evidence supporting the spread of a given sound change unequally through a lexicon in relation to the frequency of any given word. In terms of the discussion here, this supports an analysis where some high-frequency items, such as the *hire-higher* minimal pair, would be candidates for the potential spread of an existing phonological process, namely CR. There are some important differences between such an analysis and Bybee's proposal, however. Bybee (2002) suggests that there are two types of change which spread differently through a lexicon. Reductive changes (such as segment deletion) will spread faster in high-frequency words, while changes which involve analogical leveling or regularization will spread initially among low-frequency items. It is possible to characterize a change towards a CR-like diphthong, as seen for *hire*, as a reductive change given the shorter vowel duration – but this does not explain the difference observed between *hire* and *higher*. Only the combined characteristics of lexical frequency as well as morphological complexity can account for difference. This suggests that a simple correspondence between type of sound change and lexical frequency is an incomplete analysis. Other factors must be considered as well, morphological complexity being one – although, in all likelihood, only one of many.

4.2.3 Formants Revisited

As a final point of discussion, this subsection will examine the occurrence of F2 and F3 in the R-Set diphthongs. The second important characteristic of Manitoba CR

occurrence is the second vowel formant (see § 2.1 and § 4.1), which has been shown to be particularly high for *raised* forms. As discussed at the beginning of this section, however, F2 is problematic within the R-Set, due to the influence of the steep decline in F3 frequencies in advance of /ɹ/, which in turn forces F2 frequencies lower. Figure 4.9 displays the second and third formants of the two sets, R1 and R2, originally shown in Figure 4.7, expanded along the y-axis:

FIGURE 4.9 R-SET 2ND AND 3RD FORMANTS



Here, it is apparent that R1 F3 is (slightly) lower than R2 F3 throughout the vowel duration, within a range of 50-90 Hz below. The picture with F2 is somewhat less clear, but R1 F2 rises less then R2 F2 before plateauing and beginning to descend, and R1 F2 declines to an ultimately lower frequency as well, 2027 Hz for R1 vs. 2101 Hz for R2 by 90% of vowel duration. The general F3 trajectory for both groups is a lengthy steady state followed by a brief declining phase, beginning at about the point of the F2 plateau. The general F2 trajectory shows a rise throughout most of the vowel duration, then a decline lagging slightly behind the start of the F3 decline. These findings are consistent

with an F2 which does not have its own specific target, but is simply forced downwards by the descending F3, but are not indicative of an unusually high F2 as seen in the more typical raised variant found in the T-Set analysis in § 4.1.

We can compare between R1 and R2 the slopes of formant frequency change for each phase, defining the phases as follows based on the formant data in Table 4.8, earlier in this section: F2 rising phase occurs between 10-80% of vowel duration; F2 declining phase between 80-90% of vowel duration; F3 steady state from 10-70% of vowel duration; F3 declining phase from 70-90% of vowel duration. Table 4.22 lists the changes in frequency and time for each phase of each formant, and the calculated slope of change in frequency over time:

TABLE 4.22: R-SET 2ND AND 3RD FORMANT PHASES AND RATES OF CHANGE IN FREQUENCY

Formant / Phase			R1	R2
F2	*Rising Phase*	ΔF (Hz)	627	696
		Δt (ms)	145	163
		ΔF/Δt	**4.324**	**4.270**
	Declining Phase	ΔF	-51	-48
		Δt	21	23
		ΔF/Δt	**-2.429**	**-2.087**
F3	*Steady State Phase*	ΔF	-37	-38
		Δt	124	140
		ΔF/Δt	**-0.298**	**-0.271**
	Declining Phase	ΔF	-129	-141
		Δt	42	46
		ΔF/Δt	**-3.071**	**-3.065**

Table 4.22 does not reveal large between-group differences in the rates of change for the various identified 'phases' for F2 and F3. The largest difference is found in the F2 declining phase, which exhibits a greater decline for R1, at -2.429 Hz/ms, than R2, at -2.087 Hz/ms. However, the actual numbers are so close (-51 vs. -48 Hz and 21 vs. 23 ms) that even this difference does not seem especially significant. The F2 rising phases

for both sets have extremely similar slopes, and both F3 phases have nearly identical slopes as well.

The examination here reveals some small areas of discrepancy between R1 and R2 which must remain unresolved at this time. This does point out the value of the study of seemingly minor divergences which might reveal some unobvious effects connected to differences hidden beneath surface similarities.

5 Conclusion

5.1 Findings

The research presented in this paper has touched on a number of domains and areas of linguistic study, and hopefully has made some contribution in each. These include: acoustic phonetics; lexical frequency effects; Articulatory Phonology; and, of course, the study of Canadian Raising. The significant findings in each of these areas will be summarized in this conclusion, along with mention of some of the outstanding questions, unresolved issues, and topics which merit further study by other researchers.

Regarding the study of acoustic phonetics, the utility of multiple-timepoint spectrogram analyses when extracting spectral data such as vowel formants has been discussed. The traditional type of analysis, which uses a small number of timepoints (whether one, two, or three), is probably adequate for the study of segments that do not involve much articulatory movement. But for segments with greater movement, such as the diphthongs involved in this study, or when looking at transitions between segments, a much more detailed image emerges from the use of a multiple-timepoint analysis. Since the computational software and hardware available to any contemporary researcher is more than up to the task of dealing with these larger datasets, there seems to be no good reason not to use more timepoints where appropriate.

The other contribution towards acoustic phonetics research concerns the duration-adjusted endpoint-alignment method developed for comparison between the different diphthong variants of CR. By converting the relativistic percentile timepoints

into numeric time values, adjusting these for differing duration values, and aligning them from a common endpoint, the commonalities shared between the various diphthong variants in this study are more apparent than by a comparison between relative time positions. This method touches on other areas such as Articulatory Phonology, as well, and is not a universal solution. Rather, it is tailored to the specifics of this study in particular. But it does indicate the value of considering alternative methods of "time-slicing" when comparing variant forms. Other kinds of variants may differ in the specifics of how to align and/or adjust timepoint positions, or whether to do so at all – but the "alignment-and-adjustment" method developed here will hopefully be of value in future acoustics-based research.

Regarding the study of lexical frequency effects, this thesis has also contributed towards understanding the specifics of the relationship between types of phonological change and lexical frequency. This study has not examined CR as an example of change in progress, though it may very well be that. Still, even as an example of a process involving stable phonological variants, the study of CR may have some applicability towards the study of phonological change, as such variants may themselves become material for nascent or future changes in other parts of the phonology. The findings presented here indicate that while lexical frequency certainly has an important role to play in phonological variation, it can be difficult to distinguish its role apart from other significant factors (such as morphological complexity as discussed in this study – but certainly other factors must also play a role). Our findings also suggest that the use of lexical frequency in a categorical manner (such as high vs. low frequency) is probably simplistic at best, if not outright misleading. A better approach, as suggested by the

results here (supported by other findings such as File-Muriel (2010)), would be to consider frequency as a continuum, and to deal with comparisons between lexical items in terms of being more or less frequent relative to each other.

The contributions made here in the field of Articulatory Phonology concern the articulatory nature of vowel duration change or adjustment. Within AP, adjustments made to account for variations in vowel duration can be made in terms of either stiffness or phasing. The findings described in this thesis suggest that for Canadian Raising, the stiffness adjustment analysis cannot be correct and that the durational differences between the CR diphthong variants can only be accounted for as changes in articulatory phasing. The author is unaware of other CR studies which suggest such an account. Importantly, the difference between a phasing change vs. a stiffness change in this context is more visible due to the degree of articulatory movement involved in diphthong production. Studies concerning simple monophthongs without such coarticulatory effects would not as easily reveal a difference between the phasing vs. stiffness changes, and so it might not be obvious whether either type of analysis would be preferable in those cases[44]. The data collected for this study do not allow for a more detailed analysis of the phasing question. Importantly, the precise nature of the articulatory phasing differences between the CR diphthongs variants cannot be determined solely from spectral data. Future studies involving physical measurement of articulatory movement might be able to determine the specifics of the gestures

44 Cho (2001) suggests that timing between gestures (i.e. phasing in AP terms) is less variable within a morpheme than across morpheme boundaries, which also points to the value of comparing forms with variations in morphological complexity.

involved, and their phasing relationship to each other – but these must remain unresolved at the present time.

Regarding CR itself, as the main focus of this study, hopefully a number of contributions have been made to the literature. The results presented here have established several important defining characteristics of CR (in Manitoba). In concurrence with the existing CR linguistic literature, CR occurs as a form of allophonic variation between two distinct dipthong variants, one occuring in pre-voiceless context, and the other in pre-voiced context[45]. Apart from the impression of vowel height, hence the term "Canadian Raising", the most significant difference between the two forms is in fact their duration, with the pre-voiceless variant being roughly half the duration of the other. As discussed above in regards to multi-timepoint "time-slicing" and durational adjusting, the analysis of the two variants here considers them to share a common final articulatory target, so this durational difference is achieved by re-phasing of the underlying articulatory gestures. Under this view, the two variants share a common formant path. The second half of the formant paths of the pre-voiced variant is equivalent to the entirety of the pre-voiceless variant's paths, with one small significant divergence – pre-voiceless F2 has a steeper slope of movement and reaches a higher ultimate frequency, indicating that the pre-voiceless variant reaches a somewhat more front tongue position.

The most novel contributions made in this research concerns the occurrence of /aɪ/ variants before /ɹ/. Generally, pre-/ɹ/ forms do not pattern clearly with either the

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45 Zero-consonant codas were not included in this study. Other CR research has typically treated these as equivalent to the pre-voiced forms, although this study cannot comment specifically on them.

pre-voiceless or pre-voiced variants, falling somewhere in the middle in terms of vowel duration and formant paths. This is not the expected finding according to previous CR research, on two counts: first, /ɹ/ would be expected to pattern with other voiced consonants, such as /d/, but it does not; second, the /ɹ/ variant, in terms of its acoustic characteristics, is medial to the other diphthong variants, calling into question the analysis of CR as a case of allophonic variation. There are also some divergences in pre-/ɹ/ forms related to lexical frequency effects and the number of morphemes involved. These effects are not very robust, and seem to be interconnected; high frequency pairs differing in terms of morphological complexity display some differences between their diphthong's acoustic characteristics, while others do not (or not as strongly). The differences that do occur indicate that there are similarities with the pre-voiceless and pre-voiced CR variants, though the pre-/ɹ/ variants are not equivalent to those, either; the pre-/ɹ/ variants can only be characterized as being somewhat like or unlike one or the other of the "classic" CR variants. That is, CR forms seem to occur along a continuum of variants, rather than as one or the other of two (or even three) discrete categories. The "classic" variants/allophones that have been typically studied, the pre-voiced and pre-voiceless forms, seem distinct enough on their own, but the medial pre-/ɹ/ forms call the categorical/allophonic analysis into question.

5.2 Future Directions

There are several ways to consider these findings, and this study cannot draw any definitive conclusions, but only point the way for future research in this area. It may be that there are a continuum of diphthong forms, and that more detailed study of a larger variety of lexical items will reveal even more distinct variants in between the

two traditionally known "allophones". It seems reasonable to suppose that a variety of different codas producing various coarticulatory effects on the diphthong's closing gestures might result in distinct diphthong forms. A survey of such a variety of coda forms would make a promising future research study.

Alternatively, it may be that the two traditional forms *are* categorically distinct, but are being "recruited" into a change in progress among Manitoba speakers (and possibly other Canadians). That is, the lexical and morphological differences between pairs such as *hire-higher* may be able to exploit the existence of the diphthong variants which are already available in the phonological system. Such a change may be in progress or may be stable, may be declining or increasing – there is no way from this study to make any comment in this regard, and we must leave it as an open question. Future sociolinguistic studies comparing diphthong production among different age cohorts in Manitoba, or comparing Manitoba speakers with others in adjacent regions, might reveal some of these facts about changes in diphthong production.

Another approach for future research would be to examine the phonetic realizations of surrounding material, looking especially at pre-vocalic segments. Hawkins & Nguyen (2004) have reported how syllable-final voicing can affect production of syllable-initial /l/. A detailed look at the entire syllable might reveal similar coarticulation effects occurring in combination with CR.

This thesis also indicates some problems that future research will need to address. The problem of repeated measures from each subject in the project data should be considered during the research design phase of any future experiment, even if it is ultimately not considered to be significant. The experimental design for this study

created certain limitations on data analysis. For example, the limited number of lexical items included prevented a more detailed analysis of frequency and morphology effects on duration. A differently-selected wordlist would enable a more direct comparison of these effects.

The study of Canadian English and its regional variation is still an underexplored area of linguistic research. It is to be hoped that other linguists will continue to expand this field of study in the future. The findings reported here, as the title of this thesis indicates, are strictly limited to the regional variant of English spoken in Manitoba. Whether and how these results are applicable in other parts of Canada and/or North America must remain for future research to determine.

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Appendices

Appendix 1 – Corpora

The three corpora used in this thesis are freely available for scholarly research online at the following web addresses:

1. The Corpus of Contemporary American English (COCA):
   http://www.americancorpus.org/
2. The Time Magazine Corpus (TMC):
   http://corpus.byu.edu/time/
3. The British National Corpus (BNC):
   http://www.natcorp.ox.ac.uk/

Appendix 2 – Reading List

The reading list as it was provided to each speaker is presented here.

1.	Say “mide”, please.	2.	Say “bad”, please.
3.	Say “booed”, please.	4.	Say “might”, please.
5.	Say “fie-er”, please.	6.	Say “light”, please.
7.	Say “higher”, please.	8.	Say “bide”, please.
9.	Say “tie-er”, please.	10.	Say “hood”, please.
11.	Say “boot”, please.	12.	Say “bode”, please.
13.	Say “mire”, please.	14.	Say “bad”, please.
15.	Say “bought”, please.	16.	Say “sire”, please.
17.	Say “bod”, please.	18.	Say “ride”, please.
19.	Say “right”, please.*	20.	Say “lyre”, please.
21.	Say “fide”, please.	22.	Say “boughed”, please.
23.	Say “hood”, please.	24.	Say “white”, please.
25.	Say “boot”, please.	26.	Say “but”, please.
27.	Say “lied”, please.	28.	Say “bade”, please.
29.	Say “boat”, please.	30.	Say “hood”, please.
31.	Say “bert”, please.	32.	Say “tide”, please.
33.	Say “liar”, please.	34.	Say “bat”, please.
35.	Say “shyer”, please.	36.	Say “bead”, please.
37.	Say “right”, please.	38.	Say “ride”, please.*
39.	Say “tide”, please.	40.	Say “boat”, please.
41.	Say “lyre”, please.	42.	Say “voit”, please.
43.	Say “tie-er”, please.	44.	Say “wide”, please.
45.	Say “bait”, please.	46.	Say “whyer”, please.
47.	Say “bad”, please.	48.	Say “sigher”, please.
49.	Say “bit”, please.	50.	Say “side”, please.
51.	Say “bet”, please.	52.	Say “shire”, please.
53.	Say “bought”, please.	54.	Say “shite”, please.
55.	Say “void”, please.	56.	Say “ride”, please.
57.	Say “right”, please.*	58.	Say “bat”, please.
59.	Say “wide”, please.	60.	Say “bait”, please.
61.	Say “voit”, please.	62.	Say “bode”, please.
63.	Say “fire”, please.	64.	Say “height”, please.
65.	Say “bead”, please.	66.	Say “bout”, please.
67.	Say “height”, please.	68.	Say “bet”, please.
69.	Say “bid”, please.	70.	Say “higher”, please.
71.	Say “shide”, please.	72.	Say “bait”, please.
73.	Say “white”, please.	74.	Say “tire”, please.
75.	Say “ride”, please.	76.	Say “right”, please.*
77.	Say “bought”, please.	78.	Say “hide”, please.
79.	Say “beat”, please.	80.	Say “mire”, please.

81.	Say “bout”, please.	82.	Say “wire”, please.
83.	Say “beat”, please.	84.	Say “side”, please.
85.	Say “white”, please.	86.	Say “lyre”, please.
87.	Say “shite”, please.	88.	Say “higher”, please.
89.	Say “bert”, please.	90.	Say “sight”, please.
91.	Say “fire”, please.	92.	Say “bid”, please.
93.	Say “wide”, please.	94.	Say “ride”, please.
95.	Say “write”, please.*	96.	Say “void”, please.
97.	Say “bite”, please.	98.	Say “bud”, please.
99.	Say “mire”, please.	100.	Say “bit”, please.
101.	Say “sire”, please.	102.	Say “bet”, please.
103.	Say “sight”, please.	104.	Say “put”, please.
105.	Say “bird”, please.	106.	Say “light”, please.
107.	Say “voit”, please.	108.	Say “tire”, please.
109.	Say “sight”, please.	110.	Say “boughed”, please.
111.	Say “put”, please.	112.	Say “beat”, please.
113.	Say “wright”, please.	114.	Say “ride”, please.*
115.	Say “mide”, please.	116.	Say “booed”, please.
117.	Say “lied”, please.	118.	Say “but”, please.
119.	Say “light”, please.	120.	Say “hire”, please.
121.	Say “bite”, please.	122.	Say “shide”, please.
123.	Say “boot”, please.	124.	Say “fight”, please.
125.	Say “void”, please.	126.	Say “tide”, please.
127.	Say “myer”, please.	128.	Say “bod”, please.
129.	Say “mide”, please.	130.	Say “put”, please.
131.	Say “liar”, please.	132.	Say “wright”, please.
133.	Say “ride”, please.*	134.	Say “bead”, please.
135.	Say “wire”, please.	136.	Say “fight”, please.
137.	Say “bade”, please.	138.	Say “tie-er”, please.
139.	Say “bed”, please.	140.	Say “shyer”, please.
141.	Say “side”, please.	142.	Say “liar”, please.
143.	Say “bide”, please.	144.	Say “wire”, please.
145.	Say “hide”, please.	146.	Say “bad”, please.
147.	Say “sigher”, please.	148.	Say “fide”, please.
149.	Say “bird”, please.	150.	Say “shire”, please.
151.	Say “right”, please.	152.	Say “ride”, please.*
153.	Say “bed”, please.	154.	Say “might”, please.
155.	Say “bit”, please.	156.	Say “tire”, please.
157.	Say “bide”, please.	158.	Say “tight”, please.
159.	Say “bod”, please.	160.	Say “hide”, please.
161.	Say “bert”, please.	162.	Say “whyer”, please.
163.	Say “bed”, please.	164.	Say “sigher”, please.
165.	Say “bad”, please.	166.	Say “myer”, please.
167.	Say “bode”, please.	168.	Say “fie-er”, please.

169.	Say “bite”, please.	170.	Say “ride”, please.
171.	Say “write”, please.*	172.	Say “lied”, please.
173.	Say “bat”, please.	174.	Say “height”, please.
175.	Say “but”, please.	176.	Say “fight”, please.
177.	Say “boughed”, please.	178.	Say “myer”, please.
179.	Say “shite”, please.	180.	Say “hire”, please.
181.	Say “boat”, please.	182.	Say “fie-er”, please.
183.	Say “tight”, please.	184.	Say “sire”, please.
185.	Say “bade”, please.	186.	Say “fide”, please.
187.	Say “bird”, please.	188.	Say “fire”, please.
189.	Say “ride”, please.	190.	Say “right”, please.*
191.	Say “booed”, please.	192.	Say “hire”, please.
193.	Say “tight”, please.	194.	Say “shire”, please.
195.	Say “bid”, please.	196.	Say “might”, please.
197.	Say “bout”, please.	198.	Say “whyer”, please.
199.	Say “shide”, please.	200.	Say “shyer”, please.
201.	Say “right”, please.	202.	Say “ride”, please.*

* Denotes the end of a printed page.

Appendix 3 – Speaker Data

This appendix contains all of the data collected in this study – the first, second, and third vowel formants (in Hertz) recorded at nine timepoints for each token, as well as the word spoken and the duration (in seconds). Each speaker's data is presented consecutively.

Speaker 1		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
bide	0.292	884	1336	2847	862	1213	2887	905	1139	3002
bide	0.275	892	1434	2813	962	1393	2988	980	1439	2873
bide	0.280	862	1444	2703	968	1425	2815	963	1437	2826
bite	0.144	775	1629	2648	834	1816	2757	810	1997	2806
bite	0.176	901	1620	2727	913	1767	2791	881	2052	2947
bite	0.188	878	1606	2786	901	1746	2751	897	1923	2769
fide	0.306	914	1387	2752	994	1380	2881	984	1313	2856
fide	0.310	943	1381	2763	938	1357	2837	932	1359	2873
fide	0.284	904	1242	2786	905	1293	2802	946	1313	2751
fie-er	0.424	943	1428	2700	958	1484	2864	945	1698	2822
fie-er	0.438	904	1392	2791	914	1388	2891	931	1454	2869
fie-er	0.456	887	1281	2851	1017	1219	2892	928	1615	2785
fie-er	0.257	935	1404	2730	940	1430	2740	955	1456	2815
fie-er	0.305	904	1396	2792	881	1345	2821	904	1384	2899
fie-er	0.262	895	1309	2742	953	1491	2859	811	1108	2800
fight	0.166	851	1677	2908	859	1849	2839	794	2015	2866
fight	0.153	851	1566	2848	912	1697	2830	886	1879	2866
fight	0.173	895	1551	2881	939	1666	2956	851	1922	3018
fire	0.237	897	1513	2723	892	1628	2753	875	1884	2723
fire	0.309	967	1612	2813	929	1793	2778	757	1968	2714
fire	0.286	899	1568	2639	864	1863	2706	790	2083	2682
fire	0.228	897	1523	2718	891	1627	2751	875	1850	2723
fire	0.220	950	1586	2825	966	1686	2781	903	1820	2753
fire	0.193	895	1314	2751	878	1633	2712	858	1874	2714
height	0.119	968	1980	2757	890	2074	2824	892	2206	2795
height	0.140	881	2068	2992	879	2137	2802	731	2122	2929
height	0.136	871	1940	2898	881	2026	2870	843	2172	2830
hide	0.284	982	1367	3045	1004	1400	3048	1035	1461	3081
hide	0.234	979	1462	2834	1020	1541	2936	1000	1581	2865
hide	0.261	1077	1421	2900	1060	1468	3081	1048	1480	3060
higher	0.380	937	1379	2932	998	1428	3062	947	1722	2831
higher	0.340	1048	1281	2880	1061	1497	2894	922	1928	2924

Speaker 1		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
higher	0.349	1043	1501	2908	1014	1556	2750	924	1917	2878
higher	0.260	965	1472	3017	999	1436	3049	984	1451	3034
higher	0.256	1015	1423	2844	1056	1350	2913	996	1780	3068
higher	0.243	1050	1505	2910	1056	1526	2853	1007	1597	2751
hire	0.312	1024	1440	2874	1046	1541	2936	943	1883	2913
hire	0.337	994	1471	2890	1025	1467	2944	1004	1688	2859
hire	0.254	920	1909	2768	839	2053	2863	675	2215	2833
hire	0.236	1025	1436	2870	1033	1567	2978	1077	1315	2822
hire	0.226	987	1465	2888	1010	1450	2944	1028	1497	2946
hire	0.218	920	1861	2799	905	1977	2982	758	2078	2808
liar	0.391	982	1386	3105	1007	1411	2971	979	1521	3032
liar	0.414	896	1620	3161	1013	1282	3070	974	1352	3119
liar	0.335	960	1587	3013	1043	1491	2890	1040	1559	3036
liar	0.276	966	1411	3108	945	1108	3082	998	1433	2981
liar	0.290	881	1634	3181	936	1336	2980	990	1301	3073
liar	0.274	951	1586	3171	1035	1519	2996	1047	1499	3113
lied	0.273	909	1539	3326	959	1483	3294	960	1460	3498
lied	0.298	897	1598	3076	973	1441	3152	977	1444	3137
lied	0.288	924	1490	3090	942	1433	3159	945	1442	3082
light	0.183	850	1612	3332	891	1728	3200	879	1832	3065
light	0.168	811	1706	3121	852	1733	3051	832	1866	2878
light	0.178	751	1454	3053	836	1301	3107	892	1686	3160
lyre	0.340	913	1472	3048	984	1423	2904	1010	1528	2974
lyre	0.343	959	1532	3083	1026	1508	3129	1013	1571	3143
lyre	0.341	910	1542	3115	963	1300	3118	1027	1487	3320
lyre	0.214	900	1543	3064	989	1459	3002	996	1431	2919
lyre	0.257	957	1535	3081	1017	1523	3064	1018	1538	3117
lyre	0.271	905	1570	3100	934	1430	3154	992	1322	3057
mide	0.242	933	1377	3208	904	1358	3254	897	1408	3308
mide	0.280	730	1593	3077	750	1495	3122	793	1575	3338
mide	0.282	770	1363	3157	763	1464	3000	719	1462	3245
might	0.180	936	1652	2958	962	1820	2972	913	1963	3108
might	0.144	817	1569	2987	860	1644	3137	874	1757	2955
might	0.178	843	1606	3004	811	1834	3064	767	2023	2991
mire	0.353	937	1413	3216	982	1437	3198	1031	1520	3009
mire	0.278	861	1453	3199	827	1469	3254	844	1619	3007
mire	0.354	722	1366	3174	797	1500	3048	811	1867	2974
mire	0.254	919	1398	3204	957	1421	3305	977	1435	3160
mire	0.272	854	1439	3156	826	1470	3263	840	1578	3055
mire	0.232	731	1244	3035	789	1469	3122	809	1532	3056
myer	0.375	921	1451	2940	862	1493	2953	875	1321	2888
myer	0.336	833	1408	2980	822	1298	3057	865	1515	3053
myer	0.298	836	1510	2980	898	1646	2961	836	1773	3020

Speaker 1		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
myer	0.282	900	1414	2901	884	1474	3040	875	1479	3022
myer	0.265	818	1422	2968	867	1429	3050	840	1415	3054
myer	0.266	827	1495	2982	901	1653	2893	862	1744	2985
shide	0.284	832	1259	2661	927	1660	2755	938	1346	2654
shide	0.284	645	1170	2939	917	1545	2874	966	1477	2715
shide	0.288	914	1873	2777	922	1535	2854	980	1493	2832
shire	0.384	924	1644	2754	971	1556	2869	954	1621	2850
shire	0.360	885	1267	2557	958	1443	2642	949	1558	2648
shire	0.285	906	1865	2763	913	1704	2772	924	1722	2727
shire	0.260	906	1528	2804	949	1586	2851	979	1552	2881
shire	0.236	858	950	2723	850	1251	2626	959	1463	2641
shire	0.245	901	1988	2770	904	1729	2790	921	1706	2741
shite	0.151	715	1269	2718	772	1690	3059	798	1845	2978
shite	0.159	643	1637	2928	837	1807	2934	869	2311	2998
shite	0.127	673	1279	2728	796	2124	2735	882	2010	2975
shyer	0.368	932	1670	2784	1002	1564	2910	987	1633	2748
shyer	0.335	875	1405	2709	890	1358	2694	964	1345	2721
shyer	0.346	895	1835	2597	911	1219	2716	999	1149	2594
shyer	0.252	753	945	2642	946	1656	2704	1002	1563	2909
shyer	0.247	871	1577	2848	894	1443	2838	913	1401	2729
shyer	0.270	894	1836	2598	782	1102	2538	676	1114	2484
side	0.301	913	1666	2879	1002	1561	2870	917	1453	2877
side	0.274	915	1590	2853	939	1561	2768	957	1493	2804
side	0.293	899	1625	2771	999	1623	2898	1013	1498	2798
sigher	0.413	921	1559	2637	969	1378	2717	956	1513	2775
sigher	0.379	935	1494	2730	1021	1299	2688	937	1424	2685
sigher	0.421	935	1432	2906	904	1167	2910	1020	1107	2781
sigher	0.257	906	1588	2765	981	1496	2649	971	1412	2716
sigher	0.283	932	1497	2817	979	1418	2760	1023	1306	2689
sigher	0.306	957	1589	2923	944	1418	3006	982	1276	2944
sight	0.171	778	1773	3003	854	1797	3001	839	1983	2904
sight	0.191	830	1715	2939	921	1800	2912	886	1937	3008
sight	0.132	751	1713	2921	792	1882	2925	798	1930	3071
sire	0.345	971	1570	2909	988	1497	2964	1013	1571	2864
sire	0.349	901	1538	3017	932	1593	2910	956	1565	2709
sire	0.313	860	1770	2809	923	1821	2768	825	1950	2679
sire	0.216	869	1524	2849	984	1559	2912	982	1511	2928
sire	0.245	694	975	2779	928	1517	2731	950	1594	2884
sire	0.219	849	1768	2857	902	1693	2805	903	1824	2780
tide	0.259	883	1509	3029	991	1246	3030	952	1504	3074
tide	0.225	867	1412	3011	951	1429	2987	1000	1518	2980
tide	0.235	958	1484	2732	974	1523	2718	997	1580	2661
tie-er	0.434	931	1489	2848	936	1598	2825	852	1929	2861

Speaker 1		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
tie-er	0.324	1101	1559	2873	978	1740	3028	819	1967	2872
tie-er	0.324	946	1272	2703	956	1268	2639	908	1602	2620
tie-er	0.223	942	1533	2852	931	1496	2859	936	1565	2826
tie-er	0.203	1105	1551	2896	1094	1617	2885	980	1740	3034
tie-er	0.228	953	1284	2690	951	1251	2640	940	1545	2613
tight	0.110	892	2186	2958	880	2164	2979	842	2045	2850
tight	0.132	858	2546	2890	826	2203	2877	704	2278	2935
tight	0.129	937	2159	3040	912	2096	2913	831	2097	2847
tire	0.269	960	1765	2826	911	1940	2705	765	2050	2748
tire	0.263	927	2047	2716	752	2149	2756	606	2294	2729
tire	0.301	876	1813	2893	873	1801	2828	613	2338	2814
tire	0.185	990	1710	2852	980	1770	2881	939	1843	2832
tire	0.184	952	1946	2499	921	2043	2738	785	2120	2754
tire	0.167	868	1812	2898	902	1791	2782	868	1792	2820
white	0.140	776	1441	2938	819	1667	3002	815	1859	2915
white	0.181	705	1273	3016	845	1461	2881	847	1732	2806
white	0.155	705	1215	2971	798	1414	2965	841	1559	2836
whyer	0.241	678	930	2623	752	1138	2834	726	1118	2722
whyer	0.243	891	1254	3134	920	1358	2287	940	1529	2708
whyer	0.260	651	961	2703	884	1195	2773	861	1214	2654
wide	0.298	755	990	3164	761	1137	2650	816	1162	2816
wide	0.288	691	926	2712	812	1167	2787	926	1108	2796
wide	0.280	757	1040	3089	769	1155	2940	1009	1138	2751
wire	0.285	853	1201	3070	895	1470	2955	888	1653	2847
wire	0.295	860	1225	3040	900	1457	2891	876	1804	2951
wire	0.300	768	1234	2888	882	1470	2665	850	1726	2578
wire	0.189	774	1121	3125	871	1235	3017	896	1469	2947
wire	0.218	832	1207	3095	876	1338	3019	891	1539	2864
wire	0.225	739	1196	2682	879	1421	2735	867	1595	2662

Speaker 1		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
bide	0.292	891	1199	2802	977	1517	2745	928	1692	2739
bide	0.275	961	1506	2890	998	1588	2801	1001	1757	2726
bide	0.280	981	1472	2823	987	1571	2903	981	1740	2797
bite	0.144	729	2114	2879	652	2251	3031	526	2426	3130
bite	0.176	797	2170	3044	663	2344	3088	549	2539	3079
bite	0.188	812	2124	2819	610	2326	2897	512	2479	2980
fide	0.306	990	1360	2877	998	1548	2882	931	1751	2802
fide	0.310	938	1403	2900	1001	1563	2734	955	1793	2696
fide	0.284	963	1365	2826	984	1345	2773	929	1680	2775
fie-er	0.424	775	1947	2679	657	2070	2623	631	1892	2492

Speaker 1		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
fie-er	0.438	906	1783	2763	680	2199	2767	557	2266	2714
fie-er	0.456	787	2129	2770	605	2222	2677	613	1994	2510
fie-er	0.257	965	1560	2930	944	1698	2817	907	1898	2704
fie-er	0.305	932	1402	2844	909	1588	2984	892	1405	2777
fie-er	0.262	964	1453	2922	938	1539	2799	877	1840	2775
fight	0.166	695	2176	2956	600	2396	2964	510	2533	3006
fight	0.153	772	2050	2915	622	2275	3042	502	2440	2961
fight	0.173	717	2202	2976	599	2422	3050	579	2611	3019
fire	0.237	862	1971	2663	813	2000	2567	719	2039	2545
fire	0.309	638	1975	2530	608	2013	2376	594	1970	2157
fire	0.286	658	2162	2645	630	2163	2545	609	2004	2478
fire	0.228	863	1950	2681	821	1986	2540	737	2045	2581
fire	0.220	771	1968	2707	674	1782	2567	617	2155	2274
fire	0.193	819	2016	2764	703	2116	2692	654	2168	2637
height	0.119	834	2340	3113	706	2374	3080	622	2399	3070
height	0.140	612	2367	2964	529	2482	3009	464	2583	2993
height	0.136	731	2282	2953	632	2437	2993	546	2434	3060
hide	0.284	1003	1621	3036	1001	1718	2926	896	1909	2910
hide	0.234	1006	1640	2852	993	1734	2863	950	1863	2863
hide	0.261	1054	1499	3021	1005	1690	2922	893	2006	3054
higher	0.380	767	1971	2847	685	2146	2802	623	2077	2717
higher	0.340	623	2190	3007	560	2288	3000	570	2116	2690
higher	0.349	678	2269	2835	563	2417	2873	553	2216	2820
higher	0.260	954	1697	2877	902	1920	2906	742	2050	2839
higher	0.256	896	1968	2800	634	2168	2996	560	2300	3029
higher	0.243	938	1868	2846	800	2062	2929	613	2189	2780
hire	0.312	808	2068	2747	678	2224	2693	612	2146	2658
hire	0.337	863	1962	2837	654	2211	2819	615	2181	2653
hire	0.254	602	2127	2712	582	2199	2707	631	1952	2462
hire	0.236	914	1949	2861	805	2075	2738	682	2226	2712
hire	0.226	1007	1677	2859	942	1857	2830	746	2097	2888
hire	0.218	657	2206	2857	603	2128	2715	580	2209	2702
liar	0.391	925	1736	2892	744	2021	2797	668	2192	2859
liar	0.414	954	1424	3067	814	1967	2937	670	2241	2906
liar	0.335	952	1675	2882	811	2073	2946	691	2104	2841
liar	0.276	985	1541	3010	990	1742	2872	837	2000	2897
liar	0.290	953	1284	3135	980	1281	3157	918	1695	2961
liar	0.274	1016	1600	3037	923	1697	2887	830	2002	2970
lied	0.273	955	1463	3271	974	1597	3181	951	1737	3216
lied	0.298	973	1453	3132	972	1605	2942	949	1786	2937
lied	0.288	947	1555	3047	939	1730	3003	903	1891	2988
light	0.183	800	1996	3176	675	2258	3030	546	2472	3072
light	0.168	799	1978	3003	710	2163	3127	605	2337	3104

Speaker 1		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
light	0.178	868	1870	3069	751	2045	3099	654	2282	3167
lyre	0.340	935	1721	2767	811	1907	2623	705	1905	2453
lyre	0.343	996	1737	3007	814	1966	2841	667	2127	2850
lyre	0.341	945	1693	2882	845	2204	2775	735	2259	2891
lyre	0.214	991	1440	2974	1000	1574	2921	960	1696	2798
lyre	0.257	1007	1545	3113	996	1733	3007	840	1925	2896
lyre	0.271	1004	1535	3179	941	1705	2879	850	2028	2828
mide	0.242	940	1481	3220	998	1665	3116	990	1866	3039
mide	0.280	875	1562	3114	901	1671	3084	835	1846	2920
mide	0.282	816	1551	3128	858	1631	3067	806	1811	3023
might	0.180	854	2142	3136	666	2318	3049	560	2551	3088
might	0.144	837	1926	3085	745	2080	3050	687	2261	3061
might	0.178	762	2228	2978	672	2392	3108	627	2534	3191
mire	0.353	980	1729	2866	884	1964	2640	713	2084	2591
mire	0.278	790	1879	2887	751	2080	2819	619	2002	2486
mire	0.354	696	2132	2957	606	2218	2698	575	2053	2543
mire	0.254	1029	1517	3010	1010	1670	3029	920	1863	2947
mire	0.272	814	1868	2904	780	2102	2777	638	2024	2578
mire	0.232	828	1667	3014	775	1976	2914	688	2136	2935
myer	0.375	859	1938	2742	759	2049	2632	708	2095	2656
myer	0.336	901	1535	2852	848	1779	2780	747	2012	2699
myer	0.298	737	2100	2898	677	2188	2781	642	2103	2785
myer	0.282	876	1322	2888	880	1947	2789	786	2011	2743
myer	0.265	878	1585	3063	909	1644	2835	824	1667	2798
myer	0.266	773	1930	2972	709	2225	2871	664	2106	2783
shide	0.284	1006	1547	2706	1023	1694	2736	971	1822	2774
shide	0.284	992	1564	2823	988	1573	2797	896	1821	2782
shide	0.288	991	1492	2804	947	1697	2844	901	1914	2915
shire	0.384	898	1843	3073	749	2093	2890	620	1756	2532
shire	0.360	845	1902	2638	738	2070	2612	648	2006	2499
shire	0.285	874	1884	2730	783	1955	2747	659	2064	2715
shire	0.260	951	1576	2920	900	1644	2849	890	1873	3271
shire	0.236	967	1490	2629	944	1624	2624	846	1895	2642
shire	0.245	907	1788	2738	864	1954	2741	760	1968	2754
shite	0.151	745	2015	3097	660	2455	3119	542	2352	3016
shite	0.159	846	2211	2983	762	2378	2972	688	2303	3036
shite	0.127	856	2046	2947	728	2086	2975	644	2229	2990
shyer	0.368	926	1876	2757	727	1933	2762	627	2063	2578
shyer	0.335	976	1530	2686	846	1817	2726	710	2144	2638
shyer	0.346	902	1550	2630	767	2016	2833	662	2300	2704
shyer	0.252	1007	1563	2819	964	1686	2732	925	1893	2786
shyer	0.247	966	1331	2730	987	1427	2678	873	1112	2588
shyer	0.270	947	1421	2663	898	1586	2596	800	1999	2771

Speaker 1		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
side	0.301	946	1459	2875	962	1494	2737	1000	1692	2781
side	0.274	968	1501	2803	947	1599	2759	886	1834	2716
side	0.293	943	1399	2820	968	1573	2891	955	1671	2722
sigher	0.413	864	1834	2519	725	1949	2481	652	2003	2297
sigher	0.379	920	1677	2640	762	2039	2684	614	2192	2600
sigher	0.421	918	1829	2784	703	2187	2775	613	2071	2581
sigher	0.257	977	1471	2761	936	1538	2655	880	1746	2530
sigher	0.283	932	1424	2724	936	1550	2691	909	1808	2636
sigher	0.306	879	1160	2922	938	1629	2803	891	1942	2757
sight	0.171	753	2090	2950	653	2337	2932	544	2502	2956
sight	0.191	752	2097	3039	598	2300	3031	505	2435	3009
sight	0.132	758	2149	2946	684	2289	2956	609	2395	3045
sire	0.345	975	1779	2744	877	1886	2524	743	1887	2396
sire	0.349	974	1665	2676	851	1918	2760	772	2048	2647
sire	0.313	713	2036	2625	579	2050	2584	581	1916	2425
sire	0.216	1001	1517	2890	1022	1619	2840	1007	1731	2792
sire	0.245	964	1548	2683	980	1563	2701	954	1689	2704
sire	0.219	839	1923	2646	768	2023	2666	674	2041	2647
tide	0.259	986	1349	3024	925	1887	2793	878	2078	2857
tide	0.225	1006	1542	2970	976	1572	3014	908	1897	2981
tide	0.235	1014	1667	2699	962	1796	2731	865	1945	2811
tie-er	0.434	631	2156	2711	567	2085	2649	630	1854	2395
tie-er	0.324	674	2074	2720	658	2028	2553	627	1937	2368
tie-er	0.324	757	2026	2473	652	2130	2529	568	2132	2571
tie-er	0.223	933	1607	2848	912	1777	2779	826	1968	2877
tie-er	0.203	901	1858	2931	750	1987	2862	676	2077	2719
tie-er	0.228	884	1797	2549	746	2032	2482	668	2107	2531
tight	0.110	755	2150	2744	610	2298	2870	519	2439	2964
tight	0.132	574	2422	2972	504	2559	3020	448	2627	3057
tight	0.129	740	2092	2952	673	2124	2797	571	2382	2979
tire	0.269	702	2127	2721	595	2158	2677	618	2100	2253
tire	0.263	558	2272	2774	567	2171	2688	584	2125	2725
tire	0.301	543	2582	2715	547	2295	2731	587	2104	2563
tire	0.185	908	1962	2683	812	2031	2724	713	2098	2714
tire	0.184	697	2274	2724	586	2351	2780	557	2319	2720
tire	0.167	695	2344	2699	591	2351	2811	548	2535	2695
white	0.140	728	2009	2882	599	2262	2929	534	2482	3060
white	0.181	765	1959	2961	671	2205	2962	537	2387	3011
white	0.155	815	1782	2778	722	2049	2900	669	2213	3103
whyer	0.241	850	1123	2734	974	1361	2661	840	1951	2587
whyer	0.243	889	1656	2767	786	1795	2616	737	1990	2722
whyer	0.260	876	1177	2651	863	1774	2606	761	2018	2621
wide	0.298	1007	1063	2756	974	1193	2644	911	1419	2652

Speaker 1		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
wide	0.288	996	1144	2762	990	1267	2774	929	1850	2782
wide	0.280	980	1533	2758	977	1682	2786	916	1871	2878
wire	0.285	814	1975	2754	681	2247	2652	621	2064	2609
wire	0.295	723	2065	2905	631	2237	2934	548	2091	2457
wire	0.300	695	1930	2630	654	2072	2656	601	2037	2513
wire	0.189	882	1555	2934	884	1678	2821	824	1916	2743
wire	0.218	876	1812	2951	745	1949	2802	655	2233	2983
wire	0.225	837	1768	2588	704	1918	2621	667	2039	2638

Speaker 1		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
bide	0.292	877	2044	2937	646	2307	2933	556	2301	3058
bide	0.275	881	2008	2834	742	2214	2918	630	2284	3067
bide	0.280	868	1986	2692	701	2153	2945	572	2321	2990
bite	0.144	475	2448	2959	412	2639	2983	370	2712	2987
bite	0.176	428	2688	3065	364	2735	3052	390	2793	3036
bite	0.188	489	2616	3008	429	2656	3055	377	2611	3014
fide	0.306	814	2156	2958	648	2365	3000	535	2464	3122
fide	0.310	817	2088	2795	648	2351	2973	509	2389	3058
fide	0.284	786	2173	2800	628	2337	2981	534	2346	3062
fie-er	0.424	575	1693	2025	511	1646	1929	551	1142	1845
fie-er	0.438	618	1976	2473	621	1803	2165	592	1725	2046
fie-er	0.456	583	1658	2000	540	1464	2001	567	1659	2027
fie-er	0.257	747	2025	2628	686	2073	2603	613	1995	2611
fie-er	0.305	687	2181	2785	586	2258	2708	586	2185	2706
fie-er	0.262	760	2139	2769	689	2215	2722	739	2204	2693
fight	0.166	445	2634	3034	377	2678	2990	411	2632	3061
fight	0.153	490	2580	2993	427	2647	2988	417	2549	2903
fight	0.173	456	2693	3042	401	2748	3033	394	2723	3054
Fire	0.237	701	2161	2309	653	1829	2230	636	1756	2238
fire	0.309	590	1586	2026	575	1629	2009	510	1246	2060
fire	0.286	605	1896	2299	570	1694	1969	538	1603	1912
fire	0.228	706	2159	2389	655	1721	2211	640	1779	2229
fire	0.220	608	2012	2375	588	1979	2228	599	1929	2146
fire	0.193	636	2151	2593	593	2095	2557	611	1993	2472
height	0.119	513	2484	3015	483	2554	3050	451	2635	3104
height	0.140	432	2679	3017	541	2622	2991	413	2612	3026
height	0.136	482	2566	3072	424	2627	3023	383	2670	3051
hide	0.284	781	2113	3029	681	2259	3024	549	2338	2955
hide	0.234	796	2111	2875	647	2325	2768	510	2421	3150
hide	0.261	745	2209	3100	576	2414	3119	525	2515	3138
higher	0.380	634	1909	2200	582	1481	1996	554	1759	1972

Speaker 1		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
higher	0.340	641	1965	2403	627	1805	2174	620	1767	2127
higher	0.349	573	1923	2422	640	1769	2195	579	1606	2092
higher	0.260	684	2136	2795	659	2100	2759	603	2026	2491
higher	0.256	559	2010	2723	574	2114	2674	638	1973	2416
higher	0.243	571	2358	2882	543	2318	2804	551	2079	2689
hire	0.312	665	1982	2362	640	1712	2090	624	1678	2001
hire	0.337	615	1883	2257	621	1734	2006	624	1811	2104
hire	0.254	627	1884	2307	616	1930	2075	532	1589	1922
hire	0.236	633	2169	2641	608	2083	2536	662	1965	2345
hire	0.226	655	2209	2821	594	2215	2755	605	2089	2499
hire	0.218	592	1928	2615	625	1984	2502	629	1884	2315
liar	0.391	626	2041	2412	565	1704	2097	468	1590	1959
liar	0.414	639	2099	2551	606	1798	2193	589	1673	2007
liar	0.335	628	2077	2661	646	1997	2390	638	1778	2201
liar	0.276	720	2105	2955	680	2206	2805	619	2115	2661
liar	0.290	828	2020	2944	707	2255	2931	629	2237	2873
liar	0.274	707	2182	2862	649	2162	2773	640	2086	2617
lied	0.273	802	2030	3166	659	2310	3240	596	2410	3087
lied	0.298	846	2152	3008	633	2320	3016	512	2433	3139
lied	0.288	727	2191	3052	613	2401	3176	510	2321	3148
light	0.183	479	2551	3017	394	2596	3028	415	2553	3002
light	0.168	478	2464	3067	431	2553	3037	375	2616	3035
light	0.178	497	2474	3110	441	2590	3099	416	2628	3082
lyre	0.340	655	1768	2237	580	1679	2035	528	1641	1973
lyre	0.343	636	2135	2545	633	1862	2304	618	1815	2171
lyre	0.341	633	717	2271	521	1169	2148	530	2023	3684
lyre	0.214	858	1816	2689	793	1910	2577	731	1923	2516
lyre	0.257	732	2061	2840	653	2120	2774	637	2135	2558
lyre	0.271	778	976	2572	688	1212	2592	641	696	2218
mide	0.242	740	2136	3018	610	2397	3040	451	2461	3064
mide	0.280	808	2171	2973	643	2260	3023	542	2404	3033
mide	0.282	783	2113	2994	636	2344	2958	519	2375	3088
might	0.180	460	2601	3033	395	2674	3028	387	2717	2988
might	0.144	610	2424	3061	522	2533	3065	494	2631	3060
might	0.178	531	2664	3146	463	2705	3121	422	2702	3119
mire	0.353	606	1154	2411	639	833	2095	498	1157	2040
mire	0.278	623	1925	2365	614	1726	2159	599	1633	2028
mire	0.354	584	1742	2086	581	1756	1958	477	1692	2143
mire	0.254	865	1978	2781	737	2146	2732	660	1620	2490
mire	0.272	620	1899	2287	623	1741	2170	601	1578	2026
mire	0.232	631	2146	2662	568	2161	2801	575	2041	2524
myer	0.375	656	1349	2338	516	1220	2117	411	1955	2480
myer	0.336	693	1921	2567	651	1808	2217	634	1780	2135

Speaker 1		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
myer	0.298	606	2001	2491	608	1802	2205	585	1789	1974
myer	0.282	751	2214	2602	707	2092	2656	687	1121	2441
myer	0.265	786	2281	2572	711	1578	2577	686	1918	2360
myer	0.266	628	2078	2663	618	1962	2484	609	1796	2186
shide	0.284	831	2050	2863	661	2210	2931	564	2376	3019
shide	0.284	818	2126	2843	673	2310	2805	518	2381	2993
shide	0.288	717	2178	3085	635	2232	3056	533	2299	3171
shire	0.384	586	1981	2234	579	1829	2191	473	1437	2046
shire	0.360	605	1731	2159	576	1637	2037	589	1534	1974
shire	0.285	621	2019	2665	613	1910	2426	598	1788	2308
shire	0.260	782	1989	2847	704	2178	2595	592	1419	2488
shire	0.236	802	1975	2633	698	2067	2595	650	2023	2506
shire	0.245	657	2063	2713	622	2023	2684	601	1943	2467
shite	0.151	475	2484	2949	432	2547	2987	441	2594	3007
shite	0.159	593	2324	3032	501	2472	2991	469	2536	3054
shite	0.127	547	2364	3037	483	2517	3026	459	2565	3033
shyer	0.368	567	1179	2315	552	1089	1993	523	1105	1873
shyer	0.335	622	2364	2510	572	1952	2355	603	1785	2136
shyer	0.346	634	2294	2523	602	1717	2117	563	1796	2251
shyer	0.252	807	1931	2852	678	2158	2610	616	1620	2589
shyer	0.247	832	1983	2703	715	2082	2613	618	1495	2424
shyer	0.270	684	2303	2784	664	2307	2641	634	2208	2422
side	0.301	950	1921	2797	751	2191	2926	625	2411	3058
side	0.274	814	2055	2790	684	2228	2880	549	2365	3061
side	0.293	848	1975	2779	675	2233	2912	524	2365	2981
sigher	0.413	577	1426	1939	612	1550	2763	473	1950	1988
sigher	0.379	545	2043	2410	607	1847	2330	586	1663	2016
sigher	0.421	592	2167	2298	548	1154	2295	376	1896	2417
sigher	0.257	787	1999	2202	712	1963	2467	666	1998	2402
sigher	0.283	732	1986	2712	649	2118	2685	585	2065	2663
sigher	0.306	694	2191	2782	629	2079	2608	594	2234	2447
sight	0.171	407	2591	2983	385	2652	3028	387	2631	2994
sight	0.191	411	2540	3010	382	2582	3031	390	2581	3033
sight	0.132	506	2547	3031	437	2608	3017	379	2601	2988
sire	0.345	658	1289	2012	569	1237	2089	522	1700	2030
sire	0.349	672	2003	2480	713	1925	2378	646	1842	2268
sire	0.313	606	1788	2161	597	1687	2107	553	1551	2102
sire	0.216	938	1885	2665	866	1885	2515	776	1897	2436
sire	0.245	860	1894	2743	819	2002	2652	736	2041	2591
sire	0.219	580	2054	2591	584	2000	2495	600	1853	2282
tide	0.259	734	2176	2863	619	2386	2978	509	2447	3077
tide	0.225	763	2123	3016	648	2301	3018	511	2362	3034
tide	0.235	770	2115	2869	639	2303	2962	534	2328	3029

Speaker 1		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
tie-er	0.434	532	1149	1974	486	1303	1831	533	1071	1766
tie-er	0.324	541	1580	2097	524	1718	2310	412	1847	2285
tie-er	0.324	594	1941	2352	626	1804	2175	612	1773	2141
tie-er	0.223	696	2178	3076	621	2159	2716	571	2177	2707
tie-er	0.203	676	2048	2608	653	2027	2527	642	1957	2483
tie-er	0.228	606	2122	2465	558	2126	2520	581	1960	2370
tight	0.110	482	2537	2978	477	2576	2973	452	2657	2920
tight	0.132	442	2722	3095	446	2715	3090	431	2131	2836
tight	0.129	515	2480	3021	454	2576	3011	430	2601	3026
tire	0.269	638	1907	2168	615	1383	1959	578	1530	1852
tire	0.263	593	2011	2175	627	1928	2038	592	1852	2099
tire	0.301	628	1910	2359	588	1541	2107	531	1440	1863
tire	0.185	678	2136	2727	617	2160	2637	573	2123	2694
tire	0.184	560	2214	2674	567	2140	2569	585	2129	2729
tire	0.167	539	2547	2689	544	2331	2730	553	2179	2716
white	0.140	505	2528	3019	451	2600	2992	384	2638	3001
white	0.181	466	2539	3003	389	2630	3022	387	2647	3040
white	0.155	557	2451	3040	464	2495	3029	448	2579	3046
whyer	0.241	753	2098	2630	660	2172	2612	627	2246	2487
whyer	0.243	698	2222	2623	665	2159	2503	642	1986	2189
whyer	0.260	673	2281	2741	629	2149	2350	606	1963	2152
wide	0.298	803	2079	2669	654	2324	2914	525	2389	3047
wide	0.288	766	2154	2888	661	2277	2979	551	2344	3122
wide	0.280	782	2051	2932	639	2205	2878	506	2300	2839
wire	0.285	592	1922	2296	540	1712	2086	514	1841	1855
wire	0.295	565	1655	2375	585	2077	2167	478	955	1928
wire	0.300	613	1944	2337	592	1761	2151	575	1705	1996
wire	0.189	711	2140	2682	676	2173	2736	625	2087	2613
wire	0.218	614	2352	2787	547	2120	2418	572	1928	2504
wire	0.225	604	2058	2571	600	2025	2490	612	1959	2342

Speaker 2		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
bide	0.262	856	1412	2802	910	1427	2806	915	1396	2918
bide	0.239	858	1433	2707	902	1440	2745	866	1429	2882
bide	0.296	896	1390	2756	881	1354	2748	863	1352	2876
bite	0.177	794	1484	2854	835	1606	2876	825	1820	2912
bite	0.165	801	1547	2707	826	1677	2743	806	1796	2784
bite	0.154	778	1511	2813	802	1693	2877	762	1883	2904
fide	0.278	940	1386	2814	918	1439	2850	823	1400	2931
fide	0.242	854	1467	2563	862	1463	2703	845	1443	2767
fide	0.285	874	1370	2603	847	1385	2712	854	1380	2795

Speaker 2		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
fie-er	0.328	890	1381	2487	937	1438	2599	941	1669	2789
fie-er	0.304	873	1363	2635	923	1447	2744	927	1640	2828
fie-er	0.287	856	1404	2537	884	1503	2613	918	1745	2784
fie-er	0.195	802	1310	2486	868	1348	2490	909	1420	2606
fie-er	0.179	873	1349	2670	875	1368	2638	915	1409	2668
fie-er	0.175	841	1330	2518	863	1426	2537	882	1485	2591
fight	0.149	803	1614	2638	801	1772	2687	744	1939	2836
fight	0.148	870	1514	2710	887	1705	2782	822	1926	2859
fight	0.159	889	1542	2775	893	1639	2822	876	1874	2944
fire	0.287	876	1323	2527	860	1435	2681	843	1624	2723
fire	0.277	846	1410	2583	913	1477	2577	898	1661	2694
fire	0.293	823	1398	2530	871	1496	2532	873	1751	2552
fire	0.163	815	1277	2489	896	1345	2541	892	1437	2660
fire	0.159	816	1377	2555	852	1411	2584	879	1431	2589
fire	0.147	825	1386	2537	826	1400	2533	846	1432	2510
height	0.159	965	1677	2871	899	1854	2929	794	2002	2875
height	0.130	927	1949	3039	820	2087	2919	730	2212	2947
height	0.112	872	1888	2863	802	1995	2792	743	2148	2854
hide	0.244	844	1364	2777	866	1393	2860	867	1411	2860
hide	0.210	832	1350	2137	884	1365	2755	882	1371	1918
hide	0.187	1054	1332	2859	1026	1406	2872	1013	1536	2967
higher	0.324	894	1442	2644	956	1653	2780	823	1898	2834
higher	0.259	959	1480	2768	968	1591	2701	891	1832	2750
higher	0.273	943	1434	2659	980	1539	2698	944	1750	2810
higher	0.190	925	1577	2646	882	1437	2636	971	1638	2725
higher	0.167	921	1435	2731	967	1503	2699	968	1577	2695
higher	0.181	904	1402	2807	953	1446	2654	978	1519	2675
hire	0.258	962	1483	2786	960	1577	2824	929	1785	2802
hire	0.263	940	1510	2308	936	1680	2699	825	1919	2661
hire	0.249	996	1400	1567	1044	1614	2788	920	1832	2824
hire	0.149	913	1436	2822	963	1491	2779	963	1541	2772
hire	0.146	967	1476	2037	926	1521	2324	931	1606	2731
hire	0.142	943	1392	2849	1006	1449	1788	1047	1555	1996
liar	0.291	884	1456	2917	899	1465	2882	895	1652	2484
liar	0.313	861	1436	2962	907	1397	2700	965	1572	2744
liar	0.296	895	1398	2905	941	1358	1503	913	1563	2218
liar	0.187	771	1438	3112	881	1427	2905	907	1391	2708
liar	0.203	823	1399	2973	905	1374	2851	938	1349	1427
liar	0.180	846	1482	2962	894	1450	2897	907	1459	2877
lied	0.229	834	1399	3173	892	1381	3031	896	1378	2163
lied	0.262	848	1460	3143	914	1432	3046	921	1430	3006
lied	0.255	859	1378	2987	907	1381	2866	928	1370	2899
light	0.160	758	1622	3075	789	1809	3065	761	1952	3040

Speaker 2		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
light	0.169	749	1503	3187	797	1626	3010	784	1800	3184
light	0.176	781	1552	3255	857	1659	2601	882	1819	2388
lyre	0.267	869	1450	1910	888	1443	2627	931	1599	2941
lyre	0.281	947	1523	3042	988	1529	2924	959	1664	2946
lyre	0.293	861	1488	3105	921	1480	3003	913	1550	2966
lyre	0.169	833	1466	2519	890	1439	2601	888	1442	2626
lyre	0.180	903	1516	3121	954	1515	2969	982	1525	2924
lyre	0.197	836	1491	3125	912	1482	3046	923	1477	3000
mide	0.225	903	1473	1995	921	1343	1850	983	1425	2106
mide	0.232	802	1399	2951	897	1390	2946	926	1403	2920
mide	0.236	899	1362	2973	967	1375	2988	906	1376	3029
might	0.145	809	1515	2890	858	1647	2907	838	1794	2934
might	0.158	809	1449	2909	892	1551	3024	891	1706	3091
might	0.150	882	1542	2950	860	1724	2993	763	1903	2976
mire	0.307	836	1376	2641	814	1384	2620	900	1547	2644
mire	0.292	845	1392	2599	897	1495	2645	877	1666	2780
mire	0.276	871	1474	2893	972	1504	2859	931	1590	2947
mire	0.181	788	1362	2663	831	1370	2633	809	1370	2576
mire	0.174	811	1370	2689	855	1400	2582	891	1457	2611
mire	0.194	818	1472	2932	943	1476	2862	967	1512	2872
myer	0.262	957	1476	2770	971	1502	2743	950	1594	2769
myer	0.297	923	1417	2846	974	1481	2889	1006	1722	2941
myer	0.304	1033	1428	2804	992	1472	2781	940	1596	2918
myer	0.171	931	1466	2777	976	1484	2779	970	1502	2744
myer	0.177	872	1398	2862	940	1421	2829	975	1459	2849
myer	0.197	1030	1425	2886	1019	1417	2790	992	1471	2782
shide	0.255	788	1656	2748	858	1558	2498	873	1524	2625
shide	0.179	881	1683	2790	940	1650	2652	896	1565	2398
shide	0.245	800	1636	2708	868	1562	2427	851	1537	2505
shire	0.257	827	1709	2752	836	1658	2402	821	1752	2528
shire	0.280	828	1621	2730	849	1555	2382	845	1638	2520
shire	0.275	805	1706	2563	852	1674	2496	838	1798	2449
shire	0.184	795	1714	2773	844	1692	2576	831	1655	2400
shire	0.165	788	1641	2809	858	1616	2644	849	1556	2353
shire	0.172	783	1737	2614	835	1683	2631	852	1674	2495
shite	0.148	760	1796	2889	790	1887	2826	771	1982	2783
shite	0.139	762	1877	2882	766	1913	2842	743	1957	2762
shite	0.156	741	1895	2869	746	1918	2791	728	2095	2834
shyer	0.287	842	1629	2923	824	1586	2638	817	1709	2781
shyer	0.297	873	1638	2627	880	1611	2480	833	1853	2648
shyer	0.305	909	1576	2734	904	1510	2537	904	1600	2723
shyer	0.184	820	1654	2940	827	1598	2649	824	1586	2638
shyer	0.176	854	1682	2865	874	1604	2466	879	1590	2450

Speaker 2		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
shyer	0.192	873	1603	2721	909	1542	2629	901	1504	2527
side	0.268	864	1616	2854	902	1488	2717	873	1470	2823
side	0.249	873	1590	2894	933	1457	2778	883	1392	2821
side	0.284	846	1539	2690	857	1434	2613	842	1422	2659
sigher	0.344	950	1561	2714	968	1567	2831	924	1660	2886
sigher	0.323	876	1601	2527	872	1549	2476	882	1646	2553
sigher	0.268	817	1659	2671	847	1624	2414	816	1708	2482
sigher	0.210	872	1673	2866	974	1543	2690	972	1558	2764
sigher	0.192	831	1636	2751	877	1570	2441	871	1545	2451
sigher	0.170	798	1678	2755	839	1632	2563	846	1624	2420
sight	0.142	786	1709	2668	803	1793	2604	782	1950	2751
sight	0.144	830	1765	2392	854	1929	2726	797	2011	2895
sight	0.140	744	1847	2937	750	1884	2929	740	1982	2947
sire	0.302	871	1508	2546	879	1497	2611	859	1703	2926
sire	0.243	877	1676	2741	871	1650	2481	859	1738	2518
sire	0.275	836	1692	2919	885	1684	2813	856	1836	2903
sire	0.175	824	1591	2888	916	1496	2490	887	1475	2660
sire	0.157	867	1692	2834	872	1655	2610	871	1650	2480
sire	0.174	806	1672	2872	857	1688	2889	882	1679	2833
tide	0.215	801	1472	2796	816	1487	2628	843	1551	2966
tide	0.243	945	1364	2785	994	1415	2880	971	1401	2822
tide	0.193	853	1517	2318	858	1503	2627	876	1524	1735
tie-er	0.306	934	1457	2700	923	1507	2851	907	1789	2921
tie-er	0.300	960	1481	2742	902	1676	2905	746	1977	2950
tie-er	0.325	998	1521	2773	1001	1646	2865	908	1950	2800
tie-er	0.168	937	1463	2629	910	1453	2747	908	1474	2812
tie-er	0.181	959	1413	2709	956	1509	2732	911	1612	2906
tie-er	0.182	970	1498	2754	1009	1533	2784	1022	1606	2857
tight	0.116	864	1891	2655	809	1973	2608	769	2137	2743
tight	0.125	910	1859	2578	847	1927	2593	795	2087	2755
tight	0.146	851	2163	2804	737	2368	2955	613	2422	2858
tire	0.243	948	1551	2431	945	1682	2541	883	1842	2587
tire	0.267	925	1509	2602	963	1585	2641	947	1787	2663
tire	0.269	949	1497	2619	990	1529	2726	964	1688	2661
tire	0.141	933	1530	2370	943	1571	2463	935	1650	2528
tire	0.156	927	1512	2571	922	1509	2619	956	1555	2639
tire	0.163	955	1506	2603	985	1513	2649	986	1521	2718
wire	0.280	806	1301	2649	827	1564	2774	742	1874	2729
wire	0.277	872	1219	2500	936	1449	2620	837	1755	2692
wire	0.247	853	1299	2536	931	1537	2573	815	1785	2612
wire	0.166	783	1208	2564	804	1294	2640	836	1417	2722
wire	0.154	829	1180	2499	904	1249	2526	943	1385	2598
wire	0.156	801	1222	2515	876	1375	2565	929	1507	2568

Speaker 2		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
bide	0.262	900	1430	2924	883	1487	2934	873	1631	2982
bide	0.239	852	1474	2917	854	1567	2896	813	1662	2880
bide	0.296	838	1377	2878	863	1504	2939	843	1689	2918
bite	0.177	742	1963	2865	717	2180	2875	572	2280	2983
bite	0.165	733	1972	2824	670	2134	2843	611	2275	2921
bite	0.154	701	2129	2952	675	2364	2986	521	2475	3054
fide	0.278	848	1483	3010	859	1600	3023	870	1762	3005
fide	0.242	836	1457	2758	819	1526	2828	793	1645	2839
fide	0.285	888	1384	2844	916	1479	2952	854	1642	2945
fie-er	0.328	773	2000	2887	621	2290	2876	533	2226	2769
fie-er	0.304	799	1970	2786	597	2199	2822	536	2147	2707
fie-er	0.287	795	1947	2609	712	2143	2746	591	2106	2569
fie-er	0.195	1011	1527	2638	942	1664	2785	871	1845	2883
fie-er	0.179	935	1508	2808	928	1615	2818	886	1834	2833
fie-er	0.175	910	1565	2690	916	1754	2783	831	1876	2647
fight	0.149	697	2089	2893	664	2253	2912	555	2345	2974
fight	0.148	729	2134	2919	569	2362	2948	517	2443	2942
fight	0.159	752	2078	2946	633	2238	2974	468	2437	2982
fire	0.287	771	1878	2739	687	2096	2751	590	2107	2770
fire	0.277	848	1955	2686	739	2064	2543	591	2073	2413
fire	0.293	762	1979	2570	662	2138	2574	536	2042	2427
fire	0.163	877	1489	2754	848	1588	2745	826	1765	2751
fire	0.159	925	1528	2604	916	1637	2689	871	1746	2655
fire	0.147	881	1531	2546	891	1665	2564	864	1801	2546
height	0.159	706	2276	2936	544	2403	2988	513	2462	2989
height	0.130	601	2291	2946	559	2405	2959	473	2470	3056
height	0.112	595	2200	2860	544	2278	2951	502	2375	3013
hide	0.244	876	1504	2888	846	1633	2932	788	1904	2885
hide	0.210	866	1030	1683	901	1641	2739	824	1879	2747
hide	0.187	941	1592	3017	921	1810	2876	842	2040	2879
higher	0.324	647	2147	2851	556	2228	2886	549	2105	2792
higher	0.259	721	2129	2714	568	2149	2754	509	2061	2566
higher	0.273	775	1987	2787	642	2177	2815	536	2228	2809
higher	0.190	951	1674	2785	866	1809	2820	762	1996	2825
higher	0.167	970	1708	2711	843	1850	2701	747	2081	2681
higher	0.181	972	1646	2773	914	1777	2814	794	1954	2784
hire	0.258	781	2061	2789	628	2141	2704	529	2141	2675
hire	0.263	659	2182	2810	540	2314	2774	519	2274	2708
hire	0.249	761	2030	2733	629	2230	2735	532	2200	2599
hire	0.149	959	1620	2837	946	1754	2820	870	1898	2788
hire	0.146	928	1785	2737	846	1889	2683	780	2079	2720

Speaker 2		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
hire	0.142	1014	1663	2824	929	1775	2818	844	1965	2736
liar	0.291	794	1917	2894	633	2128	3057	548	2146	3039
liar	0.313	862	1882	2815	681	2105	2786	652	2116	2686
liar	0.296	838	1650	1898	735	2106	2893	566	2192	2659
liar	0.187	915	1429	2701	966	1558	2740	931	1712	2825
liar	0.203	948	1487	2785	901	1659	2948	836	1673	1903
liar	0.180	905	1510	2792	894	1652	2485	852	1851	2824
lied	0.229	916	1399	2527	927	1503	3033	883	1670	3076
lied	0.262	921	1465	3036	910	1548	3094	870	1658	3015
lied	0.255	915	1400	2958	895	1500	3066	904	1677	3015
light	0.160	715	2104	2973	637	2340	3010	565	2459	3035
light	0.169	751	2023	2948	712	2232	2979	594	2336	2973
light	0.176	810	1966	3131	710	2220	3077	646	2414	3066
lyre	0.267	877	1766	2832	766	1904	2745	665	1929	2584
lyre	0.281	890	1805	2841	776	1941	2644	635	1965	2491
lyre	0.293	854	1771	2978	735	1937	2836	681	2100	2788
lyre	0.169	914	1512	2693	914	1628	2026	890	1735	2877
lyre	0.180	995	1588	2919	947	1691	2950	915	1779	2878
lyre	0.197	922	1528	2959	880	1629	2959	841	1818	2977
mide	0.225	1072	1499	2921	1041	1606	2946	894	1708	2981
mide	0.232	895	1439	2916	877	1545	2930	822	1664	3016
mide	0.236	983	1449	2941	924	1507	2964	854	1601	2996
might	0.145	798	1981	2963	755	2171	2963	690	2342	2973
might	0.158	782	1856	2998	728	2087	2971	716	2285	3039
might	0.150	720	2166	3013	720	2376	2979	643	2549	3038
mire	0.307	836	1779	2784	700	2008	2686	632	2000	2499
mire	0.292	771	1911	2743	711	2020	2601	665	2087	2515
mire	0.276	803	1755	2912	729	1928	2643	705	2041	2521
mire	0.181	819	1403	2635	899	1544	2631	887	1657	2795
mire	0.174	897	1558	2737	880	1661	2778	831	1809	2827
mire	0.194	938	1574	2948	851	1646	2972	775	1822	2817
myer	0.262	852	1829	2852	728	2106	2850	709	2223	2795
myer	0.297	771	2061	2882	708	2272	2927	608	2235	2748
myer	0.304	815	1885	2905	725	2189	2930	653	2258	2930
myer	0.171	961	1549	2708	963	1664	2809	862	1824	2855
myer	0.177	996	1532	2870	1007	1711	2940	879	1880	2873
myer	0.197	965	1551	2834	922	1648	2935	822	1869	2911
shide	0.255	853	1516	2731	822	1549	2898	801	1647	2912
shide	0.179	878	1565	2579	870	1647	2746	839	1758	2849
shide	0.245	834	1548	2668	814	1596	2800	799	1749	2833
shire	0.257	781	1900	2671	730	1945	2617	694	1994	2500
shire	0.280	790	1863	2685	728	2005	2575	668	2098	2549
shire	0.275	778	1907	2585	723	1965	2483	684	2037	2501

Speaker 2		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
shire	0.184	821	1723	2486	802	1870	2651	760	1910	2667
shire	0.165	845	1565	2445	845	1636	2518	825	1787	2646
shire	0.172	848	1740	2487	829	1845	2496	787	1902	2601
shite	0.148	732	2028	2743	679	2227	2887	556	2332	2932
shite	0.139	720	2101	2802	680	2261	2858	582	2405	2926
shite	0.156	696	2209	2863	636	2384	2931	505	2539	2974
shyer	0.287	763	1853	2852	695	2021	2967	630	2065	2823
shyer	0.297	740	2008	2676	613	2189	2719	519	2157	2629
shyer	0.305	826	1877	2746	682	2192	2839	572	2181	2767
shyer	0.184	819	1640	2649	814	1780	2841	771	1849	2847
shyer	0.176	867	1669	2515	834	1851	2647	773	1933	2675
shyer	0.192	906	1543	2634	904	1641	2756	848	1818	2748
side	0.268	886	1465	2944	873	1565	2965	835	1721	3028
side	0.249	850	1388	2926	839	1443	3092	846	1556	3161
side	0.284	848	1442	2780	864	1502	2823	862	1642	2909
sigher	0.344	759	1947	2861	636	2130	2824	530	2141	2782
sigher	0.323	822	1994	2722	683	2281	2862	551	2189	2794
sigher	0.268	759	1953	2617	682	1990	2650	646	2028	2528
sigher	0.210	953	1571	2824	919	1666	2888	812	1801	2852
sigher	0.192	883	1575	2531	884	1654	2545	859	1843	2551
sigher	0.170	830	1672	2453	803	1761	2451	764	1944	2608
sight	0.142	733	2047	2830	634	2245	2929	519	2374	2862
sight	0.144	742	2127	2963	619	2286	2982	525	2378	2895
sight	0.140	717	2160	2868	682	2341	2810	534	2389	2894
sire	0.302	770	1914	2746	662	1993	2610	601	2028	2399
sire	0.243	816	1987	2750	741	2046	2675	634	2052	2540
sire	0.275	766	1966	2688	718	2118	2663	595	2072	2591
sire	0.175	874	1559	2585	862	1690	2924	809	1781	2792
sire	0.157	867	1692	2505	852	1815	2651	821	1983	2757
sire	0.174	884	1751	2833	843	1865	2875	783	1944	2742
tide	0.215	812	1672	2949	782	1851	3014	735	2065	3034
tide	0.243	966	1485	2825	954	1614	2846	868	1787	2878
tide	0.193	880	1578	2231	875	1703	2805	822	1860	2785
tie-er	0.306	699	2078	2873	586	2325	2900	479	2295	2755
tie-er	0.300	630	2329	2909	486	2314	2918	486	2113	2640
tie-er	0.325	696	2235	2863	536	2287	2737	542	2186	2702
tie-er	0.168	931	1589	2889	910	1774	2915	807	1903	2938
tie-er	0.181	854	1794	2943	746	1978	2950	676	2242	2944
tie-er	0.182	977	1694	2862	922	1888	2794	814	2055	2812
tight	0.116	679	2229	2919	569	2263	2988	533	2322	3024
tight	0.125	707	2257	2838	572	2366	2882	529	2457	2922
tight	0.146	546	2560	3018	426	2674	3103	373	2654	3119
tire	0.243	790	2078	2650	709	2147	2693	595	2088	2684

Speaker 2		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
tire	0.267	787	2055	2709	638	2199	2635	573	2182	2671
tire	0.269	892	1943	2760	763	2108	2860	573	2146	2808
tire	0.141	938	1760	2547	881	1844	2588	813	1974	2599
tire	0.156	970	1653	2657	950	1774	2661	876	1972	2716
tire	0.163	997	1606	2746	962	1732	2661	931	1903	2724
wire	0.280	675	2106	2745	611	2141	2705	546	2041	2442
wire	0.277	685	2011	2690	636	2145	2795	533	2003	2444
wire	0.247	675	1932	2603	627	1974	2522	595	2020	2448
wire	0.166	822	1594	2770	786	1816	2760	709	1980	2722
wire	0.154	928	1522	2648	870	1720	2696	761	1904	2669
wire	0.156	862	1637	2586	796	1845	2619	694	1917	2616

Speaker 2		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
bide	0.262	749	1876	2881	615	2188	2839	466	2344	2950
bide	0.239	757	1902	2831	678	2124	2240	515	2252	3042
bide	0.296	760	1994	2939	554	2299	3048	497	2549	3134
bite	0.177	510	2435	3018	446	2547	3006	422	2893	3115
bite	0.165	478	2334	2923	426	2562	2948	352	2793	2926
bite	0.154	479	2632	3082	367	2975	3054	336	2209	2980
fide	0.278	718	2111	3031	559	2346	3021	428	2359	2947
fide	0.242	753	1921	2782	707	2178	2882	520	2397	3052
fide	0.285	737	1920	2945	558	2256	3035	498	2527	3104
fie-er	0.328	492	2017	2239	445	1862	1988	433	1829	1887
fie-er	0.304	516	1935	2429	469	1792	2108	420	1646	1989
fie-er	0.287	555	1941	2307	528	1839	2153	508	1739	2136
fie-er	0.195	740	2046	2891	644	2213	2870	597	2301	2869
fie-er	0.179	791	2024	2792	675	2189	2832	566	2200	2855
fie-er	0.175	777	2043	2606	733	2141	2732	638	2146	2709
fight	0.149	473	2422	2955	441	2568	2984	384	2688	2990
fight	0.148	490	2658	2936	461	2749	2935	444	2844	3096
fight	0.159	377	2605	2849	420	2819	3144	457	3019	3040
fire	0.287	483	1967	2351	441	1777	2118	408	1602	2103
fire	0.277	547	1944	2241	532	1872	2158	508	1705	2047
fire	0.293	533	1860	2246	530	1797	2139	522	1678	2145
fire	0.163	771	1877	2739	721	2038	2720	676	2110	2730
fire	0.159	850	1953	2688	785	2016	2661	726	2067	2527
fire	0.147	813	1955	2573	748	1996	2574	721	2077	2584
height	0.159	421	2381	3019	376	2349	3091	377	2609	3078
height	0.130	387	2471	3080	352	2520	3011	343	2550	2992
height	0.112	454	2482	3008	452	2718	3045	451	2804	3093
hide	0.244	680	2065	2814	620	2296	3028	496	2382	3132

Speaker 2		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
hide	0.210	717	2061	2770	666	2200	2813	492	2359	3013
hide	0.187	678	2271	2929	553	2411	3034	456	2474	3109
higher	0.324	541	1971	2342	502	1925	2162	449	1769	2158
higher	0.259	503	1924	2220	457	1752	2069	434	1592	2051
higher	0.273	493	2125	2645	474	1923	2255	447	1676	2005
higher	0.190	656	2138	2843	619	2169	2919	551	2207	2888
higher	0.167	628	2149	2711	560	2146	2730	517	2099	2616
higher	0.181	719	2077	2808	609	2212	2782	545	2234	2808
hire	0.258	496	2021	2513	476	1952	2198	438	1679	2157
hire	0.263	511	2061	2530	487	1889	2396	450	1681	2144
hire	0.249	519	2065	2458	508	1902	2214	454	1775	2162
hire	0.149	782	2059	2789	709	2138	2758	602	2141	2695
hire	0.146	669	2179	2805	570	2223	2789	538	2322	2764
hire	0.142	760	2032	2733	708	2198	2784	600	2240	2710
liar	0.291	500	2063	2818	489	1920	2729	424	1687	2319
liar	0.313	548	1963	2434	547	1876	2187	507	1745	2136
liar	0.296	559	2060	2498	540	1926	2384	475	1817	2342
liar	0.187	832	1921	2797	704	2039	2818	679	2138	2758
liar	0.203	749	2013	2906	661	2191	2813	564	2189	2655
liar	0.180	758	1966	2908	646	2116	3039	607	2149	3100
lied	0.229	793	1875	3068	652	2143	3008	492	2315	3053
lied	0.262	811	1934	2948	681	2201	2952	510	2345	3070
lied	0.255	827	1894	2773	680	2222	2915	530	2321	2937
light	0.160	431	2470	2970	406	2466	2966	373	2513	2957
light	0.169	504	2451	2976	422	2575	3023	370	2761	3076
light	0.176	482	2555	3037	434	2820	3104	346	2864	3060
lyre	0.267	605	1924	2407	524	1803	2304	473	1635	2106
lyre	0.281	564	1861	2388	494	1817	2312	425	1665	2288
lyre	0.293	586	2035	2647	509	1853	2450	428	1583	2355
lyre	0.169	818	1860	2861	747	1907	2701	679	1930	2632
lyre	0.180	834	1863	2762	769	1944	2625	670	1969	2546
lyre	0.197	754	1910	2890	711	2063	2799	665	2096	2720
mide	0.225	705	1939	2969	612	2164	2878	467	2280	2954
mide	0.232	759	1929	2915	695	2173	2824	509	2342	2944
mide	0.236	764	1838	2955	679	2138	2906	526	2363	3089
might	0.145	527	2458	3063	417	2465	3038	398	2666	2969
might	0.158	604	2462	3047	545	2630	3001	421	2816	3015
might	0.150	530	2710	3057	502	2804	3114	481	2793	3062
mire	0.307	588	1916	2182	498	1726	2076	466	1723	1956
mire	0.292	594	2007	2217	496	1773	2152	427	1620	2077
mire	0.276	648	2063	2335	559	1957	2227	486	1703	2082
mire	0.181	808	1806	2738	725	1956	2679	655	2028	2634
mire	0.174	754	1925	2708	719	1969	2604	699	2071	2606

Speaker 2		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
mire	0.194	731	1925	2655	719	1982	2548	687	2053	2448
myer	0.262	540	2094	2444	538	1876	2180	527	1814	2111
myer	0.297	546	2041	2542	530	1873	2204	524	1813	2145
myer	0.304	521	2066	2758	516	1963	2509	503	1811	2248
myer	0.171	747	1973	2796	722	2166	2873	713	2223	2800
myer	0.177	745	2105	2884	709	2238	2944	705	2308	2863
myer	0.197	745	2063	2869	721	2228	2939	678	2263	2923
shide	0.255	764	1904	2952	688	2139	2920	528	2362	2996
shide	0.179	781	1934	2953	719	2065	3021	599	2229	3081
shide	0.245	737	1948	2830	668	2241	2986	514	2429	3073
shire	0.257	640	2034	2450	571	1970	2416	503	1849	2181
shire	0.280	552	2024	2419	545	1902	2396	516	1771	2210
shire	0.275	595	2010	2390	543	1958	2244	513	1774	2106
shire	0.184	729	1948	2617	703	1995	2544	673	2014	2470
shire	0.165	778	1890	2695	733	1980	2610	727	2044	2593
shire	0.172	740	1929	2498	720	1976	2493	702	2031	2507
shite	0.148	493	2388	2960	470	2474	2865	428	2697	2965
shite	0.139	485	2486	2966	456	2585	2977	383	2657	3007
shite	0.156	453	2612	3007	409	2715	3022	373	2691	3046
shyer	0.287	519	2035	2559	460	1949	2276	424	1683	2165
shyer	0.297	526	1970	2228	519	1838	2137	508	1634	2038
shyer	0.305	568	2003	2485	558	1898	2218	538	1731	2112
shyer	0.184	718	1951	2903	686	2043	2970	644	2066	2864
shyer	0.176	730	2048	2680	664	2161	2713	551	2195	2706
shyer	0.192	785	2025	2772	674	2194	2831	589	2187	2786
side	0.268	680	1970	3019	575	2286	2966	440	2406	2969
side	0.249	806	1831	3014	695	2152	3037	539	2416	3160
side	0.284	785	1990	2833	590	2307	3005	509	2460	3040
sigher	0.344	515	2010	2464	510	1879	2322	476	1724	2263
sigher	0.323	530	2033	2545	495	1889	2207	448	1763	2168
sigher	0.268	560	1930	2382	506	1845	2307	455	1648	2121
sigher	0.210	709	1989	2833	647	2098	2765	588	2177	2800
sigher	0.192	797	2040	2773	730	2229	2860	591	2258	2826
sigher	0.170	707	1978	2693	676	2001	2632	657	2027	2551
sight	0.142	506	2546	2934	496	2677	2928	470	2772	3034
sight	0.144	508	2524	2964	472	2674	3019	398	2718	3015
sight	0.140	501	2562	2957	489	2675	2923	432	2681	2990
sire	0.302	549	1946	2332	492	1903	2165	452	1751	2180
sire	0.243	544	2009	2283	507	1907	2110	478	1650	1982
sire	0.275	513	1956	2432	498	1864	2217	495	1775	2052
sire	0.175	758	1930	2735	682	1968	2646	652	2019	2625
sire	0.157	771	2027	2752	721	2048	2665	650	2054	2549
sire	0.174	737	2039	2673	712	2122	2662	641	2104	2632

Speaker 2		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
tide	0.215	679	2279	3162	585	2323	3221	464	2363	3240
tide	0.243	747	2033	2889	621	2303	2880	461	2445	3043
tide	0.193	701	2003	2813	618	2218	2925	486	2325	3029
tie-er	0.306	497	1981	2256	472	1846	2016	448	1728	2014
tie-er	0.300	502	1945	2115	489	1772	2030	498	1809	1866
tie-er	0.325	548	1896	2282	537	1854	2092	520	1722	2132
tie-er	0.168	682	2092	2870	618	2267	2883	560	2333	2906
tie-er	0.181	599	2343	2926	503	2315	2889	474	2251	2892
tie-er	0.182	703	2232	2864	558	2295	2802	535	2276	2741
tight	0.116	460	2501	3014	395	2783	3069	385	2876	3118
tight	0.125	511	2675	3013	476	2779	3028	444	2914	3094
tight	0.146	360	2805	3122	367	2970	3036	352	2926	3174
tire	0.243	567	2025	2382	554	1959	2204	509	1672	2016
tire	0.267	578	2017	2357	571	1764	2091	545	1755	2049
tire	0.269	531	2106	2665	521	2026	2394	503	1848	2081
tire	0.141	781	2109	2661	736	2149	2719	663	2138	2687
tire	0.156	772	2084	2705	699	2181	2662	599	2182	2663
tire	0.163	835	1994	2808	769	2104	2858	633	2159	2834
wire	0.280	510	1938	2182	467	1901	2074	428	1707	2122
wire	0.277	526	1926	2299	528	1861	2235	519	1846	2123
wire	0.247	571	1896	2286	542	1890	2182	483	1732	2061
wire	0.166	680	2092	2750	651	2156	2746	603	2133	2689
wire	0.154	688	2007	2686	674	2103	2770	627	2148	2784
wire	0.156	646	1963	2569	625	1979	2519	600	2020	2516

Speaker 3		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
bide	0.268	749	1361	2796	863	1338	2817	868	1330	2776
bide	0.295	837	1356	2645	970	1359	2718	970	1348	2689
bide	0.340	781	1304	2709	868	1313	2631	926	1324	2731
bite	0.198	848	1398	2696	919	1504	2723	1000	1637	2765
bite	0.183	751	1270	2663	883	1369	2684	959	1550	2719
bite	0.145	813	1494	2642	852	1625	2720	823	1760	2780
fide	0.269	809	1393	2662	887	1366	2801	933	1453	2854
fide	0.347	958	1378	2710	1034	1395	2744	1067	1385	2781
fide	0.270	902	1384	2708	972	1411	2850	1021	1386	2788
fie-er	0.393	1002	1348	2745	1018	1585	2656	807	2006	2761
fie-er	0.415	970	1423	2635	1030	1478	2666	927	1784	2758
fie-er	0.419	916	1376	2547	931	1469	2677	942	1722	2751
fie-er	0.289	985	1402	2631	973	1432	2654	1028	1501	2671
fie-er	0.279	890	1386	2581	939	1409	2680	930	1473	2676
fie-er	0.246	907	1348	2697	1107	1357	2746	1018	1586	2656

Speaker 3		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
fight	0.149	776	1497	2669	809	1675	2757	735	1883	2800
fight	0.135	699	1488	2661	745	1656	2771	723	1816	2813
fight	0.168	805	1468	2821	894	1574	2898	909	1688	2928
fire	0.386	868	1386	2685	943	1622	2747	803	1962	2785
fire	0.372	899	1416	2722	1018	1472	2648	872	1814	2668
fire	0.395	975	1465	2734	975	1500	2855	963	1713	2888
fire	0.234	848	1377	2646	893	1407	2720	938	1539	2718
fire	0.228	814	1382	2705	931	1414	2716	999	1437	2681
fire	0.260	895	1479	2754	1022	1448	2681	983	1495	2866
height	0.164	946	1695	2674	921	1818	2830	797	2009	2853
height	0.157	869	1777	2938	786	1945	2864	701	2097	2849
height	0.155	921	1645	2763	881	1781	2741	778	1957	2801
hide	0.223	911	1433	2823	998	1418	2860	1027	1430	2864
hide	0.364	990	1390	2767	1019	1397	2825	998	1459	2831
hide	0.281	983	1441	2790	1051	1427	2900	1046	1486	2955
higher	0.328	1010	1503	2792	969	1616	2764	793	1935	2770
higher	0.374	977	1442	2790	938	1636	2782	811	1911	2809
higher	0.356	1044	1510	2680	1042	1696	2835	750	2070	2905
higher	0.233	959	1434	2824	964	1481	2816	937	1619	2798
higher	0.233	1043	1473	2713	1041	1533	2821	1060	1659	2780
higher	0.256	1007	1482	2686	930	1469	2625	914	1549	2690
hire	0.427	931	1477	2667	928	1564	2686	922	1865	2716
hire	0.376	1084	1402	2739	958	1796	2745	717	2098	2794
hire	0.332	1001	1595	2753	905	1804	2864	660	2122	2880
hire	0.193	999	1474	2703	1010	1534	2823	971	1613	2766
hire	0.212	1036	1401	2725	1079	1435	2746	1017	1655	2682
hire	0.200	997	1550	2689	991	1647	2767	914	1792	2871
liar	0.390	883	1398	2967	981	1471	2859	930	1784	2906
liar	0.453	786	1371	2985	974	1415	2726	917	1845	2950
liar	0.431	879	1410	2967	959	1462	2861	827	1754	3030
liar	0.242	803	1367	3011	915	1427	2885	983	1447	2849
liar	0.269	739	1369	3039	886	1368	2743	983	1423	2733
liar	0.271	757	1428	3021	891	1391	2919	962	1456	2860
lied	0.343	874	1412	3150	942	1368	2918	980	1391	2929
lied	0.306	803	1505	3104	911	1396	2805	960	1381	2717
lied	0.317	809	1372	3028	953	1322	2892	982	1324	2979
light	0.149	702	1307	3199	824	1376	3111	874	1556	3132
light	0.158	650	1365	2928	738	1466	3020	805	1564	3119
light	0.146	686	1410	3048	782	1519	3016	819	1596	3035
lyre	0.401	847	1321	2737	984	1405	2705	981	1765	2826
lyre	0.411	875	1391	2923	958	1393	2779	962	1640	2852
lyre	0.364	863	1354	3013	950	1355	2893	952	1689	2934
lyre	0.241	772	1322	2959	911	1313	2767	980	1339	2696

Speaker 3		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
lyre	0.262	819	1401	2999	910	1370	2846	955	1385	2791
lyre	0.264	792	1396	3077	891	1333	2982	955	1361	2893
mide	0.248	954	1466	3027	995	1464	3067	975	1510	3033
mide	0.294	939	1436	3026	970	1408	3099	997	1436	3156
mide	0.343	877	1505	2973	914	1458	3037	964	1455	3060
might	0.167	951	1532	2959	995	1625	3004	975	1764	2994
might	0.198	873	1486	3003	924	1583	3023	902	1734	3025
might	0.182	903	1462	3003	958	1561	2952	895	1736	2966
mire	0.392	1005	1423	2988	1101	1424	3047	1015	1631	2693
mire	0.374	980	1438	2979	980	1460	2898	1051	1606	2826
mire	0.437	916	1350	3125	958	1449	3152	1001	1656	2931
mire	0.269	961	1422	2942	1018	1421	3004	1099	1425	3049
mire	0.272	955	1452	2971	978	1389	3007	971	1494	2857
mire	0.293	945	1371	3133	891	1372	3164	966	1456	3146
myer	0.425	975	1394	3076	996	1413	3102	940	1607	3049
myer	0.429	967	1463	3014	1001	1434	3033	976	1646	2858
myer	0.405	984	1367	2941	997	1416	2956	924	1770	2978
myer	0.285	953	1431	3018	947	1391	3107	1017	1405	3114
myer	0.284	929	1459	2988	999	1434	3127	1003	1448	3020
myer	0.258	953	1451	2926	948	1369	2939	984	1405	2954
shide	0.274	771	1617	2919	908	1490	2910	977	1422	2879
shide	0.359	899	1485	2905	962	1368	2755	970	1525	2930
shide	0.265	815	1568	2880	958	1496	2993	948	1490	2956
shire	0.390	795	1599	2867	939	1625	2924	863	1799	2606
shire	0.370	854	1498	2841	1017	1530	3153	945	1770	2891
shire	0.392	838	1532	2830	991	1534	2964	960	1607	2578
shire	0.237	738	1675	2875	921	1576	2866	944	1608	2931
shire	0.260	806	1566	2918	951	1478	2844	1009	1538	2978
shire	0.262	744	1598	2902	890	1487	2821	989	1529	2956
shite	0.163	725	1651	2893	856	1567	2835	902	1625	2812
shite	0.196	680	1738	2901	819	1676	2828	812	1840	2817
shyer	0.419	930	1439	2809	971	1462	2826	998	1647	2718
shyer	0.395	917	1432	2829	1046	1541	2767	887	1855	2776
shyer	0.382	839	1514	2837	1031	1424	2732	1020	1655	2661
shyer	0.270	805	1484	2846	956	1396	2648	973	1466	2822
shyer	0.255	830	1560	2844	1000	1418	2877	1045	1520	2779
shyer	0.272	726	1603	2870	902	1468	2846	1054	1436	2729
side	0.289	827	1523	2982	953	1376	2977	1003	1367	2921
side	0.381	951	1498	2981	942	1339	2729	1061	1486	2823
side	0.299	839	1615	2967	1044	1498	3022	1011	1439	2881
sigher	0.421	874	1505	3022	955	1471	2837	976	1628	2797
sigher	0.425	950	1581	2939	1063	1450	2620	841	1831	2831
sigher	0.417	999	1509	2892	1040	1465	2897	1025	1630	3039

Speaker 3		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
sigher	0.285	767	1537	3018	919	1427	2997	961	1475	2873
sigher	0.271	804	1642	2905	984	1528	2920	1035	1450	2685
sigher	0.285	824	1542	3038	1063	1500	2893	1042	1460	2897
sight	0.174	738	1608	3035	837	1640	3027	845	1834	3009
sight	0.174	689	1633	2934	797	1672	2930	819	1742	2919
sight	0.151	707	1711	2926	864	1746	2962	894	1857	3003
sire	0.443	992	1504	2928	1061	1615	2771	869	1901	2997
sire	0.350	844	1501	2892	961	1577	3113	871	1823	3038
sire	0.392	973	1582	2886	1017	1571	2844	927	1871	2900
sire	0.272	789	1597	2927	997	1464	2898	1084	1531	2780
sire	0.243	785	1574	2923	863	1487	2882	961	1578	3110
sire	0.259	867	1618	2915	993	1578	2763	1017	1569	2843
tide	0.289	972	1436	2667	1059	1357	2772	1084	1378	2814
tide	0.301	890	1416	2694	950	1403	2801	951	1418	2872
tide	0.328	965	1398	2891	977	1427	2913	984	1451	2893
tight	0.148	835	1946	3007	768	2046	3127	681	2172	3097
tight	0.143	779	1827	2953	774	1982	2953	692	2127	2906
tight	0.166	844	1836	2823	780	1958	2810	720	2127	2814
tire	0.393	997	1505	2635	962	1697	2624	799	2034	2709
tire	0.346	1067	1584	2920	950	1800	3151	694	2093	3080
tire	0.368	1041	1648	2858	907	1960	2902	632	2130	2818
tire	0.225	986	1486	2655	986	1530	2593	964	1629	2615
tire	0.220	1065	1502	2780	1052	1606	2974	977	1764	3156
tire	0.207	1082	1561	2886	1028	1718	2861	956	1891	2876
white	0.182	676	1216	2666	774	1393	2654	754	1633	2751
white	0.189	590	1129	2622	744	1296	2595	791	1521	2587
white	0.159	645	1063	2666	747	1230	2519	821	1486	2560
whyer	0.302	753	1250	2695	893	1308	2627	935	1478	2593
whyer	0.275	798	1171	2567	1070	1201	2578	994	1419	2627
whyer	0.301	838	1155	2629	898	1271	2607	926	1365	2657
wide	0.256	816	1106	2745	1033	1150	2680	1118	1184	2674
wide	0.312	797	1231	2782	844	1275	2908	876	1317	2923
wide	0.328	832	1144	2675	1075	1317	2709	1036	1396	2817
wire	0.213	857	1232	2665	920	1291	2603	979	1466	2607
wire	0.232	835	1203	2599	1036	1294	2539	1021	1529	2540
wire	0.247	738	1204	2634	926	1311	2585	971	1440	2611

Speaker 3		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
bide	0.268	869	1383	2784	903	1405	2819	911	1501	2840
bide	0.295	1040	1385	2731	999	1516	2728	938	1682	2782
bide	0.340	963	1410	2773	979	1547	2791	892	1762	2699
bite	0.198	834	1871	2859	660	2113	2831	516	2377	2867

Speaker 3		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
bite	0.183	827	1777	2788	737	1982	2816	615	2239	2922
bite	0.145	750	1964	2910	645	2128	2833	557	2281	2865
fide	0.269	988	1548	2843	971	1615	2827	930	1757	2765
fide	0.347	1030	1438	2707	1008	1526	2667	967	1723	2659
fide	0.270	969	1481	2828	958	1579	2880	902	1818	2967
fie-er	0.393	640	2296	2904	571	2310	2890	557	2011	2441
fie-er	0.415	721	2078	2840	556	2223	2871	532	2186	2726
fie-er	0.419	786	2024	2784	596	2157	2801	581	2115	2604
fie-er	0.289	963	1704	2752	843	1909	2851	680	2123	2844
fie-er	0.279	958	1648	2702	908	1780	2761	783	2028	2784
fie-er	0.246	918	1837	2706	749	2111	2815	653	2275	2890
fight	0.149	629	2083	2843	589	2314	2908	524	2544	3041
fight	0.135	663	1954	2845	611	2149	2825	554	2414	2943
fight	0.168	821	1920	2961	721	2079	2903	577	2284	2914
fire	0.386	571	2216	2763	534	2235	2689	525	1985	2442
fire	0.372	719	2045	2856	611	2130	2642	584	2033	2503
fire	0.395	774	2071	2817	578	2262	2843	530	2238	2603
fire	0.234	892	1767	2786	796	1973	2777	630	2145	2726
fire	0.228	963	1593	2572	868	1820	2669	793	2012	2897
fire	0.260	996	1610	2826	950	1777	2847	804	2047	2821
height	0.164	637	2194	2802	563	2472	2966	486	2559	3031
height	0.157	600	2329	2820	481	2464	2916	440	2521	2968
height	0.155	706	2107	2772	575	2343	2835	464	2521	2892
hide	0.223	1062	1459	2855	982	1674	2802	928	1859	2834
hide	0.364	957	1612	2781	827	1896	2766	634	2149	2744
hide	0.281	1066	1553	2938	1035	1716	2931	921	1968	2971
higher	0.328	620	2113	2825	575	2197	2757	561	2041	2413
higher	0.374	645	2205	2826	579	2264	2817	560	2093	2629
higher	0.356	589	2305	2902	556	2339	2819	532	2101	2566
higher	0.233	876	1773	2777	774	1989	2848	657	2156	2819
higher	0.233	902	1881	2912	693	2182	2917	602	2250	2888
higher	0.256	950	1681	2677	907	1895	2715	768	2052	2682
hire	0.427	697	2097	2685	569	2199	2717	549	2080	2585
hire	0.376	619	2303	2832	584	2189	2587	537	1909	2353
hire	0.332	577	2194	2733	535	2130	2540	545	1966	2341
hire	0.193	918	1772	2818	745	1979	2777	631	2108	2843
hire	0.212	925	1864	2751	743	2071	2812	667	2235	2779
hire	0.200	777	2048	2884	637	2138	2841	592	2158	2762
liar	0.390	691	2089	2921	587	2133	2771	548	1961	2440
liar	0.453	658	2150	2965	581	2195	2763	561	1888	2485
liar	0.431	600	2323	3058	512	2391	2883	523	1969	2374
liar	0.242	972	1623	2875	887	1831	2931	716	2033	2919
liar	0.269	986	1644	2813	836	1931	2993	663	2130	2975

Speaker 3		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
liar	0.271	922	1649	3031	761	1855	3002	634	2249	3026
lied	0.343	989	1396	3001	1025	1476	3041	983	1689	3033
lied	0.306	967	1445	2805	964	1527	2896	970	1652	2921
lied	0.317	968	1347	3051	976	1396	3044	953	1543	2971
light	0.149	879	1750	3156	619	2351	3014	533	2608	3029
light	0.158	849	1689	3202	785	1842	3102	675	2047	3229
light	0.146	796	1733	3103	693	1931	3133	614	2155	3050
lyre	0.401	706	2042	2874	616	2037	2691	564	1895	2390
lyre	0.411	836	1962	2875	697	2066	2792	567	2004	2564
lyre	0.364	808	1984	2959	644	2119	2833	589	2046	2527
lyre	0.241	1028	1558	2808	981	1762	2824	796	1985	2940
lyre	0.262	1011	1508	2769	964	1696	2915	857	1921	2872
lyre	0.264	965	1600	2918	890	1842	2959	770	2036	2971
mide	0.248	991	1521	3048	1005	1585	3035	971	1739	3030
mide	0.294	1029	1490	3162	1014	1700	3044	860	1929	3038
mide	0.343	932	1526	3037	932	1575	3024	869	1748	2967
might	0.167	841	1968	2940	681	2245	2905	610	2467	2992
might	0.198	855	1977	2931	674	2214	2921	602	2444	2997
might	0.182	843	1970	2950	672	2250	2837	604	2453	2942
mire	0.392	845	1998	2896	637	2135	2776	587	2044	2479
mire	0.374	894	1905	2748	670	2136	2845	569	2185	2813
mire	0.437	812	2047	2869	663	2138	2767	666	2050	2559
mire	0.269	1002	1558	2832	957	1761	2714	818	2016	2877
mire	0.272	1050	1595	2822	953	1827	2769	763	2019	2732
mire	0.293	1011	1569	2981	934	1787	2836	800	2071	2870
myer	0.425	772	2060	3108	592	2235	2930	571	2110	2675
myer	0.429	818	2057	2952	599	2223	2882	555	2123	2619
myer	0.405	727	2132	2856	592	2278	2828	598	2051	2529
myer	0.285	1001	1470	3048	917	1767	3038	806	2049	2965
myer	0.284	967	1577	2829	958	1793	2837	792	2080	2944
myer	0.258	1099	1575	2964	870	1847	2965	729	2106	2843
shide	0.274	928	1509	2797	917	1543	2821	909	1668	2752
shide	0.359	1003	1551	2914	1016	1558	2960	980	1717	2847
shide	0.265	925	1542	2982	903	1574	2985	901	1663	2778
shire	0.390	722	1903	2471	630	1939	2344	621	1838	2179
shire	0.370	774	2008	2748	596	2155	2828	529	2167	2628
shire	0.392	745	1938	2723	621	2147	2810	557	2135	2607
shire	0.237	917	1731	2809	844	1813	2607	756	1886	2561
shire	0.260	939	1709	2892	858	1920	2754	730	2104	2827
shire	0.262	976	1553	2706	879	1698	2576	741	1946	2744
shite	0.163	914	1766	2785	778	1890	2731	665	2049	2674
shite	0.196	689	2020	2815	614	2237	2805	556	2434	2962
shyer	0.419	835	2035	2823	568	2151	2919	547	2089	2568

Speaker 3		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
shyer	0.395	690	2082	2855	593	2149	2695	574	2002	2429
shyer	0.382	808	1971	2844	572	2160	2826	523	2173	2679
shyer	0.270	974	1575	2800	963	1750	2717	844	2023	2806
shyer	0.255	969	1707	2743	868	1911	2884	724	2076	2822
shyer	0.272	1028	1603	2664	924	1852	2759	768	2038	2760
side	0.289	999	1453	2874	1000	1468	2871	987	1502	2786
side	0.381	944	1508	2803	985	1594	2899	923	1698	2814
side	0.299	977	1468	2821	956	1495	2749	931	1742	2802
sigher	0.421	764	2025	2809	587	2213	2928	530	2098	2560
sigher	0.425	622	2117	2866	506	2241	2891	570	1995	2485
sigher	0.417	813	2020	3038	621	2232	2794	557	2103	2579
sigher	0.285	979	1596	2843	919	1816	2759	705	2069	2829
sigher	0.271	939	1605	2502	785	1889	2897	653	2101	2851
sigher	0.285	1047	1582	2901	904	1692	2846	790	2034	3011
sight	0.174	780	2038	2939	710	2245	2867	552	2409	2841
sight	0.174	808	1874	2931	760	2088	3033	647	2284	2864
sight	0.151	788	1998	2926	657	2221	2930	583	2490	3011
sire	0.443	657	2140	2926	614	2180	2822	573	1987	2410
sire	0.350	663	1995	2756	525	2308	2793	552	2219	2671
sire	0.392	642	2163	2948	516	2386	2891	548	2111	2631
sire	0.272	971	1726	2804	855	1919	3012	675	2106	2926
sire	0.243	931	1714	2926	739	1917	2993	652	2074	2796
sire	0.259	988	1724	2802	840	1976	2913	648	2158	2958
tide	0.289	980	1478	2752	963	1625	2704	819	1876	2785
tide	0.301	1103	1515	2876	1057	1665	2842	870	1928	2974
tide	0.328	982	1548	2873	949	1694	2960	832	1894	2915
tight	0.148	597	2460	3021	458	2565	2961	440	2750	3287
tight	0.143	620	2281	2964	524	2535	3064	426	2613	3201
tight	0.166	650	2295	2881	534	2511	2933	460	2577	3018
tire	0.393	612	2223	2801	550	2146	2584	551	1923	2259
tire	0.346	591	2282	2852	545	2260	2700	554	2036	2490
tire	0.368	577	2215	2704	570	2061	2533	537	1880	2305
tire	0.225	929	1816	2646	811	2006	2696	673	2158	2816
tire	0.220	835	1961	3145	671	2123	2902	617	2248	2870
tire	0.207	805	2024	2899	646	2111	2828	594	2162	2789
white	0.182	667	1907	2755	591	2219	2760	541	2497	2978
white	0.189	744	1739	2731	605	2143	2795	551	2440	2935
white	0.159	785	1715	2689	687	1928	2760	593	2276	2773
whyer	0.302	959	1719	2717	754	1974	2812	617	2132	2889
whyer	0.275	990	1620	2628	857	1849	2706	687	2065	2771
whyer	0.301	919	1561	2658	851	1766	2609	730	1996	2805
wide	0.256	1064	1255	2621	1051	1473	2728	917	1786	2902
wide	0.312	925	1364	2890	937	1480	2836	878	1663	2745

Speaker 3		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
wide	0.328	1012	1470	2874	999	1592	2890	931	1749	2933
wire	0.213	1001	1644	2612	894	1827	2676	732	2041	2827
wire	0.232	995	1811	2643	816	1914	2611	676	2021	2622
wire	0.247	963	1614	2630	878	1832	2771	761	2053	2841

Speaker 3		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
bide	0.268	899	1702	2884	646	2107	2935	522	2298	2923
bide	0.295	803	1965	2791	626	2214	2750	497	2393	2838
bide	0.340	748	2024	2857	570	2282	2871	507	2372	2864
bite	0.198	430	2586	3047	447	2662	2994	486	2841	3446
bite	0.183	588	2459	2929	524	2624	3075	444	2531	2977
bite	0.145	533	2478	3008	475	2557	3129	385	2690	3181
fide	0.269	792	1987	2825	629	2250	2897	510	2356	2973
fide	0.347	775	2025	2920	592	2255	2760	491	2407	2913
fide	0.270	744	2102	2881	563	2374	2863	489	2363	2880
fie-er	0.393	586	1773	2135	554	1694	1943	529	1671	1927
fie-er	0.415	568	1870	2334	573	1743	2066	544	1693	2057
fie-er	0.419	557	1917	2382	557	1784	2182	520	1720	2032
fie-er	0.289	564	2213	2866	536	2235	2846	539	2086	2655
fie-er	0.279	658	2115	2799	565	2155	2787	580	2115	2604
fie-er	0.246	563	2374	2939	568	2281	2858	533	2085	2534
fight	0.149	505	2634	3208	456	2782	3358	415	2794	3293
fight	0.135	512	2473	3020	414	2681	3064	391	2673	3100
fight	0.168	501	2579	2952	434	2693	3046	385	2790	3182
fire	0.386	498	1824	2174	469	1783	2082	481	1700	2022
fire	0.372	550	1830	2250	526	1666	2042	487	1663	1923
fire	0.395	520	1909	2391	492	1770	2103	489	1693	1973
fire	0.234	550	2265	2764	534	2262	2716	532	2164	2587
fire	0.228	658	2087	2706	619	2149	2647	589	2118	2609
fire	0.260	635	2196	2796	564	2321	2878	533	2274	2664
height	0.164	418	2622	3092	385	2726	3239	361	2731	3261
height	0.157	409	2693	3167	429	2782	3487	372	2764	3287
height	0.155	425	2772	2915	404	2847	3010	384	2847	3338
hide	0.223	683	2117	2858	560	2308	2916	503	2481	3013
hide	0.364	529	2269	2747	473	2453	2819	448	2486	2872
hide	0.281	720	2215	2878	549	2427	2999	489	2577	3034
higher	0.328	546	1819	2110	534	1682	1989	501	1638	1824
higher	0.374	524	1962	2369	526	1890	2220	497	1761	2085
higher	0.356	523	1925	2217	544	1769	2110	523	1752	2010
higher	0.233	609	2258	2895	581	2267	2810	568	2216	2697
higher	0.233	572	2358	2887	555	2310	2804	537	2149	2580
higher	0.256	638	2140	2719	575	2204	2711	548	2149	2653

Speaker 3		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
hire	0.427	547	1896	2300	538	1815	2116	523	1723	1946
hire	0.376	513	1768	2147	520	1732	2026	494	1753	1942
hire	0.332	561	1870	2151	538	1843	2092	512	1718	2035
hire	0.193	596	2161	2804	578	2194	2774	583	2140	2598
hire	0.212	620	2302	2837	594	2316	2674	578	2148	2540
hire	0.200	556	2180	2676	535	2136	2549	532	2007	2421
liar	0.390	563	1797	2097	539	1704	1903	520	1627	1843
liar	0.453	550	1769	2167	528	1681	2018	484	1636	1903
liar	0.431	548	1776	2255	487	1698	2403	406	1727	1993
liar	0.242	617	2156	2887	587	2139	2765	560	2051	2583
liar	0.269	613	2199	2939	581	2201	2767	587	2056	2594
liar	0.271	546	2402	2996	504	2361	2846	505	2101	2566
lied	0.343	851	1921	2966	602	2153	2856	531	2492	2933
lied	0.306	880	1930	2981	659	2148	2910	516	2477	3021
lied	0.317	859	1840	2950	629	2069	2850	500	2447	2986
light	0.149	479	2635	3039	457	2794	3219	420	2926	3316
light	0.158	605	2325	3121	564	2504	3080	527	2668	3172
light	0.146	561	2414	2996	510	2683	3094	424	2661	3122
lyre	0.401	569	1770	2132	563	1732	2048	503	1669	1954
lyre	0.411	566	1876	2237	591	1766	2135	553	1682	2055
lyre	0.364	544	1921	2234	507	1805	2016	505	1621	2044
lyre	0.241	685	2022	2905	613	2062	2780	596	2009	2590
lyre	0.262	753	2042	2830	681	2062	2769	581	2041	2619
lyre	0.264	660	2119	2851	593	2113	2666	560	1993	2457
mide	0.248	806	1994	2929	587	2175	2885	502	2380	2920
mide	0.294	709	2126	2849	589	2333	2879	471	2475	2941
mide	0.343	727	1979	2851	604	2281	2901	520	2474	3034
might	0.167	575	2571	3095	515	2662	3105	442	2864	3317
might	0.198	577	2643	3076	523	2751	3257	442	2879	3412
might	0.182	583	2596	2993	537	2734	3180	464	2927	3155
mire	0.392	546	1903	2249	515	1804	2038	523	1684	1981
mire	0.374	602	2006	2533	543	1829	2326	506	1741	2084
mire	0.437	633	1913	2368	592	1835	2171	511	1813	1977
mire	0.269	652	2112	2804	616	2112	2637	583	2035	2451
mire	0.272	670	2164	2857	576	2191	2841	583	2085	2623
mire	0.293	691	2164	2819	600	2147	2711	666	2041	2549
myer	0.425	597	1824	2328	573	1689	2162	502	1666	1939
myer	0.429	565	1819	2324	511	1732	2070	484	1699	2024
myer	0.405	589	1820	2277	558	1760	2173	532	1664	2097
myer	0.285	637	2166	2993	577	2232	2913	562	2131	2691
myer	0.284	637	2184	2944	575	2238	2820	553	2112	2607
myer	0.258	629	2204	2863	608	2268	2808	602	2103	2579
shide	0.274	819	1915	2800	652	2176	2823	498	2418	2938

Speaker 3		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
shide	0.359	808	1967	2876	603	2243	2837	475	2332	2860
shide	0.265	783	1940	2935	625	2146	2741	532	2383	2916
shire	0.390	603	1778	2063	550	1754	1909	532	1773	1977
shire	0.370	511	1984	2450	523	1893	2163	509	1803	1970
shire	0.392	589	1923	2330	579	1815	2119	543	1716	2008
shire	0.237	671	1945	2434	628	1939	2346	653	1879	2257
shire	0.260	599	2151	2826	539	2176	2751	528	2111	2619
shire	0.262	639	2117	2791	591	2185	2769	555	2128	2597
shite	0.163	576	2248	2739	544	2465	2834	456	2526	2999
shite	0.196	478	2559	3118	400	2711	3209	387	2752	3266
shyer	0.419	591	1801	2220	550	1728	2058	503	1690	1926
shyer	0.395	534	1806	2162	508	1680	2063	492	1651	1954
shyer	0.382	573	1984	2398	561	1851	2149	534	1742	2014
shyer	0.270	655	2098	2911	547	2211	2906	545	2115	2643
shyer	0.255	620	2137	2797	590	2137	2674	582	2076	2448
shyer	0.272	579	2146	2822	535	2216	2804	525	2125	2568
side	0.289	943	1718	2725	743	2044	2816	563	2314	2883
side	0.381	794	1947	2900	620	2224	2916	484	2472	2982
side	0.299	774	1980	2875	604	2248	2856	507	2386	2925
sigher	0.421	590	1805	2242	553	1745	2020	525	1724	1931
sigher	0.425	518	1818	2192	525	1765	2090	519	1756	2002
sigher	0.417	561	1862	2232	557	1668	1995	516	1611	1899
sigher	0.285	592	2227	2918	557	2223	2855	533	2043	2499
sigher	0.271	536	2190	2937	525	2226	2848	586	2088	2604
sigher	0.285	641	2236	2892	592	2207	2722	553	2059	2523
sight	0.174	471	2556	2923	459	2563	3018	486	2790	3672
sight	0.174	484	2463	3024	425	2615	3052	393	2624	3222
sight	0.151	490	2538	3103	430	2630	3162	425	2726	3229
sire	0.443	572	1927	2977	545	1803	2528	525	1733	1982
sire	0.350	510	1934	2306	523	1834	2084	512	1761	1981
sire	0.392	518	1816	2331	495	1757	2126	498	1704	1992
sire	0.272	648	2152	2944	616	2199	2859	598	2097	2678
sire	0.243	548	2316	2886	554	2364	2731	540	2177	2603
sire	0.259	560	2355	2926	526	2377	2820	549	2131	2635
tide	0.289	691	2049	2694	571	2223	2813	488	2376	2943
tide	0.301	671	2206	2890	573	2374	2842	509	2528	2949
tide	0.328	686	2203	2954	554	2420	2982	476	2617	3039
tight	0.148	431	2747	3386	446	2977	3276	437	2902	3524
tight	0.143	412	2650	3294	448	2684	3422	430	2868	3364
tight	0.166	429	2727	2999	412	2858	3341	405	2890	3389
tire	0.393	573	1770	2075	561	1777	1970	541	1754	1929
tire	0.346	497	1863	2194	475	1789	2051	459	1687	1979
tire	0.368	520	1848	2166	509	1826	2083	496	1748	2052

Speaker 3		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
tire	0.225	603	2234	2800	562	2196	2640	548	2121	2475
tire	0.220	525	2290	2808	545	2250	2693	570	2099	2546
tire	0.207	577	2207	2698	568	2156	2688	568	2053	2505
white	0.182	422	2569	3079	367	2708	3171	345	2838	3126
white	0.189	468	2595	3132	411	2686	3270	376	2788	3288
white	0.159	470	2499	2949	436	2726	3125	424	2706	3286
whyer	0.302	589	2144	2790	567	2107	2678	567	1945	2483
whyer	0.275	588	2158	2755	552	2125	2611	581	2026	2404
whyer	0.301	585	2082	2770	584	2096	2551	590	1975	2368
wide	0.256	678	2065	2810	561	2341	2814	500	2420	2866
wide	0.312	776	1884	2821	648	2157	2748	499	2413	2803
wide	0.328	789	1986	2894	630	2259	2846	494	2517	2819
wire	0.213	600	2097	2744	544	2124	2625	535	2033	2488
wire	0.232	635	2126	2650	578	2070	2576	559	1983	2461
wire	0.247	615	2141	2863	597	2162	2721	592	2107	2486

Speaker 4		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
bide	0.327	880	1424	2475	871	1429	2452	888	1470	2462
bide	0.317	883	1445	2472	898	1474	2468	901	1518	2480
bide	0.314	894	1516	2576	911	1492	2503	917	1522	2484
bite	0.174	873	1625	2597	874	1811	2673	814	1961	2757
bite	0.199	871	1676	2676	869	1779	2688	821	1954	2812
bite	0.179	779	1568	2731	785	1701	2810	773	1858	2852
fide	0.328	931	1468	2400	893	1482	2406	898	1522	2443
fide	0.351	936	1430	2416	956	1444	2367	933	1489	2406
fide	0.360	902	1405	2457	935	1397	2458	968	1434	2462
fight	0.150	851	1665	2655	859	1775	2763	825	1979	2884
fight	0.142	811	1565	2486	858	1690	2552	829	1793	2594
fight	0.167	863	1654	2571	866	1767	2629	845	1831	2615
fire	0.311	839	1390	2452	867	1433	2467	872	1573	2455
fire	0.430	963	1507	2646	976	1556	2636	914	1819	2625
fire	0.300	873	1453	2459	925	1501	2445	892	1641	2447
fire	0.196	830	1384	2436	848	1399	2463	872	1422	2458
fire	0.226	885	1477	2624	974	1507	2645	969	1517	2645
fire	0.188	830	1435	2438	883	1463	2458	927	1493	2450
height	0.166	893	1822	2596	847	1977	2688	777	2065	2709
height	0.164	922	1836	2744	839	2013	2851	780	2175	2932
height	0.184	926	1905	2727	836	1996	2714	776	2162	2858
hide	0.282	927	1440	2284	908	1493	2303	930	1596	2338
hide	0.285	922	1479	2422	955	1545	2462	958	1694	2494
hide	0.304	1074	1520	2665	1101	1557	2650	1053	1682	2675
higher	0.386	958	1461	2612	977	1591	2558	876	1973	2760

Speaker 4		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
higher	0.401	910	1447	2416	908	1650	2499	775	2092	2787
higher	0.209	905	1498	2669	961	1458	2607	977	1485	2563
higher	0.223	923	1444	2471	898	1439	2410	907	1557	2491
hire	0.353	987	1453	2582	1019	1594	2566	923	1891	2669
hire	0.356	915	1474	2635	965	1571	2569	896	1991	2825
hire	0.324	996	1574	2544	979	1809	2599	834	2052	2812
hire	0.360	915	1528	2419	901	1612	2578	828	1919	2758
hire	0.199	952	1448	2637	989	1467	2572	991	1515	2558
hire	0.183	932	1503	2681	918	1479	2632	954	1514	2574
hire	0.182	869	1512	2538	1006	1593	2547	1002	1715	2564
hire	0.200	924	1548	2644	923	1544	2538	902	1575	2600
liar	0.389	897	1470	2544	941	1497	2427	942	1833	2718
liar	0.389	876	1463	2689	882	1492	2599	919	1610	2580
liar	0.420	829	1352	2690	873	1457	2381	920	1721	2482
liar	0.212	897	1462	2913	900	1479	2536	916	1455	2446
liar	0.255	867	1462	2778	873	1469	2674	881	1491	2600
liar	0.234	800	1282	2698	834	1364	2654	865	1430	2544
lied	0.326	894	1438	2670	924	1448	2610	945	1490	2621
lied	0.345	892	1435	2701	904	1445	2609	899	1463	2553
lied	0.342	857	1440	2623	865	1448	2504	892	1470	2529
light	0.179	863	1682	2854	824	1891	2792	771	2111	3022
light	0.163	779	1565	2003	809	1806	2377	794	2001	2712
light	0.192	787	1612	2827	801	1807	2838	748	1939	2923
mide	0.351	844	1441	2828	823	1466	2764	821	1484	2720
mide	0.341	788	1381	2639	788	1424	2600	784	1485	2605
mide	0.354	864	1433	2549	817	1410	2443	825	1462	2480
might	0.181	845	1757	2789	805	1886	2846	768	2088	2932
might	0.190	802	1554	2801	815	1797	2807	759	2011	2879
might	0.173	804	1707	2841	802	1903	2889	747	2119	2955
shide	0.349	855	1705	2783	928	1515	2537	911	1496	2514
shide	0.335	826	1508	2469	871	1501	2372	879	1539	2410
shite	0.149	729	1760	2662	824	1803	2579	829	1927	2575
shite	0.184	786	1833	2671	816	1821	2503	815	1939	2561
shite	0.164	765	1789	2497	781	1741	2465	758	1865	2516
shyer	0.419	873	1743	2499	934	1645	2491	927	1715	2535
shyer	0.391	896	1670	2578	943	1521	2418	932	1805	2537
shyer	0.401	849	1521	2290	904	1528	2371	917	1776	2517
shyer	0.250	814	1812	2770	906	1687	2440	931	1635	2487
shyer	0.240	767	1839	2757	933	1587	2441	936	1523	2404
shyer	0.239	798	1754	2816	867	1492	2323	891	1531	2375
side	0.400	887	1491	2489	888	1435	2521	901	1454	2521
side	0.360	880	1616	2552	896	1459	2489	902	1484	2489
side	0.374	879	1640	2521	861	1567	2504	869	1583	2517

Speaker 4		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
sigher	0.449	902	1573	2429	894	1538	2423	914	1737	2480
sigher	0.387	908	1577	2569	931	1501	2495	919	1682	2532
sigher	0.392	923	1549	2581	901	1509	2525	913	1632	2492
sigher	0.261	811	1659	2540	905	1563	2432	889	1528	2422
sigher	0.236	839	1658	2616	918	1533	2525	936	1497	2495
sigher	0.248	857	1769	2723	917	1512	2563	904	1509	2525
sight	0.212	843	1621	2454	852	1801	2467	783	2024	2723
sight	0.133	734	1880	2721	816	1849	2535	833	1805	2459
sight	0.143	798	1780	2707	843	1807	2687	847	1922	2675
tide	0.294	895	1494	2475	882	1510	2469	897	1573	2504
tide	0.300	892	1510	2619	913	1520	2631	931	1603	2626
tide	0.354	917	1468	2412	895	1422	2348	912	1506	2271
tight	0.147	838	1899	2529	787	2047	2628	711	2252	2826
tight	0.156	841	1942	2701	788	2066	2788	720	2212	2880
tight	0.146	835	1906	2679	811	2049	2764	741	2169	2859
tight	0.144	838	1889	2714	813	2019	2801	718	2129	2779
tire	0.312	877	1560	2490	906	1602	2506	879	1857	2574
tire	0.399	964	1520	2770	1058	1639	2685	848	1954	2740
tire	0.380	887	1495	2396	929	1627	2426	837	2017	2649
tire	0.193	888	1546	2486	886	1574	2491	904	1587	2502
tire	0.207	950	1522	2775	967	1523	2768	1015	1544	2736
tire	0.203	885	1467	2408	889	1495	2395	912	1536	2387
white	0.136	786	1669	2791	768	1940	2824	743	2132	2925
white	0.154	819	1424	2641	809	1730	2648	774	2034	2774
white	0.168	761	1375	2682	791	1669	2671	764	1886	2719
wide	0.316	874	1317	2627	897	1406	2637	899	1544	2646
wide	0.302	802	1220	2589	814	1340	2551	847	1411	2569
wide	0.354	802	1215	2492	832	1323	2396	903	1427	2451
wire	0.357	873	1455	2564	878	1560	2549	882	1874	2639
wire	0.355	905	1445	2479	930	1613	2473	813	1851	2491
wire	0.389	863	1399	2526	900	1572	2501	816	1973	2611
wire	0.199	862	1348	2584	870	1469	2561	861	1506	2556
wire	0.180	856	1348	2527	906	1448	2478	940	1531	2480
wire	0.186	846	1367	2646	862	1394	2541	884	1448	2496

Speaker 4		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
bide	0.327	889	1577	2479	866	1841	2599	735	2024	2734
bide	0.317	891	1599	2494	863	1789	2574	798	2030	2715
bide	0.314	915	1636	2513	849	1783	2570	738	2046	2753
bite	0.174	727	2190	2885	628	2371	3012	536	2516	3110
bite	0.199	748	2118	2973	655	2313	3036	553	2557	3164
bite	0.179	733	2068	2943	711	2188	2972	582	2310	3070

Speaker 4		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
fide	0.328	896	1607	2497	863	1820	2598	731	2037	2807
fide	0.351	929	1582	2463	880	1802	2619	775	1987	2856
fide	0.360	983	1527	2480	884	1756	2548	785	1968	2674
fight	0.150	780	2113	2937	682	2241	2984	599	2347	2973
fight	0.142	805	1975	2707	767	2140	2881	653	2248	2957
fight	0.167	783	1968	2754	671	2154	2901	624	2274	2895
fire	0.311	789	1753	2436	727	1889	2482	688	1971	2488
fire	0.430	773	2126	2810	640	2182	2774	630	2082	2591
fire	0.300	833	1791	2446	746	1943	2485	707	1996	2488
fire	0.196	855	1496	2546	856	1602	2458	808	1718	2447
fire	0.226	980	1582	2629	952	1727	2634	887	1899	2649
fire	0.188	913	1559	2432	884	1659	2450	849	1755	2439
height	0.166	723	2199	2850	589	2340	2925	569	2464	2943
height	0.164	648	2246	2678	587	2445	3037	569	2523	3035
height	0.184	627	2245	2871	597	2359	2875	495	2464	2916
hide	0.282	920	1757	2436	818	1949	2669	709	2129	2852
hide	0.285	893	1887	2602	809	2065	2759	742	2218	2850
hide	0.304	913	1828	2689	770	2025	2748	659	2196	2789
higher	0.386	678	2208	2908	588	2284	2822	565	2180	2716
higher	0.401	608	2284	2896	567	2257	2809	563	2140	2621
higher	0.209	968	1679	2567	931	1839	2691	797	2016	2768
higher	0.223	904	1752	2539	819	2005	2714	739	2164	2871
hire	0.353	741	2127	2844	679	2182	2759	663	2119	2678
hire	0.356	767	2183	2933	657	2297	2898	634	2230	2729
hire	0.324	669	2244	2944	590	2329	2855	563	2230	2721
hire	0.360	684	2142	2787	598	2187	2726	595	2071	2575
hire	0.199	1020	1669	2578	957	1866	2641	870	2002	2725
hire	0.183	966	1584	2570	950	1759	2620	879	2004	2864
hire	0.182	946	1878	2646	856	1988	2745	794	2131	2896
hire	0.200	890	1637	2578	859	1830	2732	788	2012	2789
liar	0.389	766	2150	2927	614	2292	2895	580	2146	2699
liar	0.389	844	1895	2579	726	2123	2737	613	2103	2624
liar	0.420	766	2084	2681	672	2156	2644	615	2004	2390
liar	0.212	958	1546	2497	966	1792	2673	906	1924	2762
liar	0.255	914	1537	2595	917	1674	2552	855	1857	2564
liar	0.234	885	1480	2450	930	1623	2465	886	1930	2566
lied	0.326	967	1583	2615	906	1810	2684	778	2022	2888
lied	0.345	913	1512	2539	886	1744	2624	769	2008	2856
lied	0.342	882	1504	2519	881	1705	2565	780	2061	2890
light	0.179	664	2265	3043	597	2425	2983	539	2553	3100
light	0.163	760	2112	2825	668	2255	2562	597	2414	2616
light	0.192	730	2174	2985	657	2313	3031	553	2428	3037
mide	0.351	842	1531	2713	848	1781	2791	767	2028	2956

Speaker 4		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
mide	0.341	830	1631	2641	787	1933	2799	730	2174	3021
mide	0.354	852	1630	2552	759	1932	2722	688	2188	2973
might	0.181	685	2314	3093	622	2490	3051	563	2639	3163
might	0.190	690	2249	3035	574	2452	3116	517	2611	3130
might	0.173	708	2299	3067	609	2495	2554	551	2660	2937
shide	0.349	914	1560	2531	874	1738	2587	765	2071	2850
shide	0.335	892	1591	2474	856	1711	2571	769	2002	2771
shite	0.149	771	2043	2648	716	2222	2834	593	2421	2989
shite	0.184	740	2091	2663	679	2277	2832	562	2398	2872
shite	0.164	726	2027	2629	687	2248	2864	592	2395	2989
shyer	0.419	865	1941	2672	715	2055	2700	657	2069	2621
shyer	0.391	820	2090	2814	684	2234	2894	605	2241	2751
shyer	0.401	770	2112	2780	608	2277	2891	587	2204	2719
shyer	0.250	930	1654	2504	927	1714	2534	916	1831	2606
shyer	0.240	941	1586	2409	930	1810	2549	877	1995	2733
shyer	0.239	912	1586	2383	917	1773	2513	857	1963	2656
side	0.400	906	1573	2582	828	1899	2663	701	2150	2902
side	0.360	962	1638	2515	871	1733	2566	793	1908	2654
side	0.374	850	1614	2498	831	1706	2574	773	2022	2914
sigher	0.449	764	2024	2631	601	2268	2749	589	2229	2657
sigher	0.387	788	2057	2784	630	2258	2827	606	2218	2746
sigher	0.392	806	1994	2575	676	2212	2894	590	2190	2754
sigher	0.261	908	1568	2427	916	1711	2471	876	1859	2514
sigher	0.236	934	1544	2503	914	1698	2539	819	1955	2707
sigher	0.248	901	1553	2502	913	1666	2479	853	1888	2530
sight	0.212	709	2253	2999	568	2417	3051	523	2524	3048
sight	0.133	806	1819	2456	779	1984	2558	747	2097	2674
sight	0.143	814	2033	2710	769	2182	2828	707	2286	2964
tide	0.294	862	1684	2546	809	1969	2754	749	2122	2928
tide	0.300	906	1730	2625	826	1991	2856	703	2142	2988
tide	0.354	891	1702	2486	765	1956	2294	696	2151	2284
tight	0.147	639	2384	3004	533	2553	3039	500	2655	3013
tight	0.156	685	2377	2988	583	2454	3043	561	2536	3036
tight	0.146	678	2293	2927	620	2359	2912	578	2458	2972
tight	0.144	644	2226	2778	599	2365	2869	549	2443	2898
tire	0.312	762	2123	2837	684	2216	2831	600	2217	2708
tire	0.399	719	2190	2823	615	2205	2739	620	2043	2538
tire	0.380	729	2177	2785	630	2179	2691	636	2055	2524
tire	0.193	906	1686	2527	867	1895	2589	781	2055	2757
tire	0.207	1053	1661	2677	942	1846	2693	830	1991	2755
tire	0.203	934	1685	2446	900	1901	2546	791	2056	2676
white	0.136	629	2285	2955	578	2424	3039	496	2538	3055
white	0.154	688	2257	2877	597	2412	2947	545	2536	3033

Speaker 4		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
white	0.168	709	2096	2778	601	2264	2890	535	2448	2883
wide	0.316	859	1762	2713	797	1936	2855	686	2114	2912
wide	0.302	871	1558	2563	832	1826	2642	710	2136	2930
wide	0.354	942	1580	2508	846	1901	2639	714	2146	2834
wire	0.357	745	2080	2787	695	2168	2744	653	2140	2705
wire	0.355	695	2107	2759	608	2093	2622	584	1992	2421
wire	0.389	716	2151	2733	630	2141	2586	651	1994	2382
wire	0.199	894	1623	2558	891	1787	2599	875	1794	2723
wire	0.180	927	1620	2472	870	1754	2459	808	1865	2503
wire	0.186	898	1549	2506	899	1753	2561	833	1915	2593

Speaker 4		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
bide	0.327	636	2250	2960	544	2356	2978	487	2436	3043
bide	0.317	663	2220	2905	599	2377	2965	502	2458	3012
bide	0.314	665	2284	2944	530	2446	3007	490	2494	3010
bite	0.174	459	2665	3071	403	2791	3022	375	2809	2956
bite	0.199	489	2659	3114	418	2803	3154	388	2786	3076
bite	0.179	521	2516	3078	485	2597	3063	420	2651	3037
fide	0.328	669	2244	2936	558	2319	2949	513	2352	2979
fide	0.351	657	2178	2902	611	2284	2867	522	2341	2896
fide	0.360	644	2193	2904	579	2325	2891	549	2348	2934
fight	0.150	539	2481	2979	499	2567	3010	454	2583	3017
fight	0.142	593	2409	2987	540	2454	3019	483	2604	3071
fight	0.167	560	2396	2950	483	2470	2928	440	2485	2859
fire	0.311	659	1915	2354	635	1809	2175	591	1678	2068
fire	0.430	660	1946	2375	627	1894	2236	595	1908	2212
fire	0.300	683	1973	2393	663	1912	2294	633	1856	2194
fire	0.196	757	1850	2462	725	1903	2483	696	1991	2535
fire	0.226	789	2036	2778	749	2170	2826	665	2189	2792
fire	0.188	808	1864	2460	745	1944	2486	720	1977	2508
height	0.166	505	2510	2963	460	2563	2941	452	2545	2935
height	0.164	522	2623	3002	459	2630	2966	415	2728	2912
height	0.184	428	2542	2878	400	2568	2898	387	2574	2931
hide	0.282	625	2305	2937	523	2391	2902	487	2496	2907
hide	0.285	591	2355	2874	537	2419	2852	515	2400	2808
hide	0.304	514	2398	2837	460	2505	2700	456	2422	2729
higher	0.386	624	1963	2453	616	1798	2273	582	1733	2203
higher	0.401	598	1990	2417	603	1899	2281	582	1876	2214
higher	0.209	725	2183	2908	614	2232	2863	592	2275	2827
higher	0.223	624	2275	2903	579	2291	2882	567	2256	2808
hire	0.353	653	2004	2536	631	1912	2400	635	1903	2361
hire	0.356	666	2072	2509	629	1867	2311	611	1846	2202

Speaker 4		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
hire	0.324	578	2077	2525	612	1932	2323	591	1863	2209
hire	0.360	627	1898	2260	615	1781	2140	605	1726	2097
hire	0.199	748	2121	2843	707	2169	2800	678	2181	2763
hire	0.183	784	2112	2850	762	2212	2958	701	2287	2930
hire	0.182	682	2242	2953	614	2284	2923	589	2326	2842
hire	0.200	717	2119	2786	622	2176	2777	598	2187	2727
liar	0.389	603	1943	2376	593	1809	2179	578	1746	2063
liar	0.389	617	2007	2460	613	1857	2292	607	1784	2144
liar	0.420	610	1744	2067	595	1567	1972	552	1628	1999
liar	0.212	783	2093	2899	701	2217	2967	623	2289	2907
liar	0.255	760	2047	2669	699	2123	2732	624	2107	2633
liar	0.234	779	2064	2668	734	2148	2687	671	2156	2643
lied	0.326	670	2246	2980	617	2349	3017	531	2379	2976
lied	0.345	665	2227	2971	563	2378	2992	499	2398	2983
lied	0.342	656	2242	2988	591	2339	2940	528	2341	2922
light	0.179	488	2664	3095	435	2706	3058	434	2766	3132
light	0.163	562	2458	3145	496	2506	2682	434	2300	2644
light	0.192	515	2562	3050	486	2622	2994	430	2621	3000
mide	0.351	682	2217	2998	578	2389	3072	516	2424	3004
mide	0.341	609	2380	3154	525	2512	3137	495	2555	3111
mide	0.354	616	2413	3224	561	2484	3037	497	2498	3023
might	0.181	537	2727	3122	579	2789	3131	494	2728	3012
might	0.190	473	2738	3130	409	2817	3089	423	2829	3147
might	0.173	519	2820	3359	488	2895	3336	457	2995	3414
shide	0.349	657	2228	2904	577	2345	2909	503	2399	2935
shide	0.335	678	2179	2852	592	2331	2931	507	2389	2966
shite	0.149	558	2511	3008	520	2645	3108	424	2705	3068
shite	0.184	499	2530	2890	476	2583	2995	448	2594	3063
shite	0.164	537	2534	3009	516	2653	3075	446	2723	2999
shyer	0.419	620	1984	2400	583	1901	2273	536	1845	2160
shyer	0.391	598	2075	2470	610	1886	2247	593	1822	2172
shyer	0.401	573	1997	2453	618	1840	2241	608	1759	2136
shyer	0.250	821	1959	2685	734	2053	2732	699	2105	2713
shyer	0.240	783	2170	2889	699	2224	2901	636	2264	2820
shyer	0.239	758	2173	2865	632	2264	2911	595	2253	2827
side	0.400	615	2273	2916	547	2361	2900	518	2355	2848
side	0.360	694	2155	2910	594	2322	2901	549	2378	3015
side	0.374	646	2224	2969	559	2394	2947	465	2489	2998
sigher	0.449	615	2039	2491	598	1903	2328	589	1866	2221
sigher	0.387	602	2075	2572	608	1942	2414	588	1866	2301
sigher	0.392	596	2067	2548	640	1914	2363	630	1850	2218
sigher	0.261	756	2060	2663	626	2226	2741	593	2296	2744
sigher	0.236	765	2153	2828	640	2252	2828	615	2260	2819

Speaker 4		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
sigher	0.248	763	2071	2778	666	2215	2885	601	2202	2785
sight	0.212	437	2655	3043	378	2703	3067	416	2691	3019
sight	0.133	698	2266	2862	584	2388	2998	525	2514	3070
sight	0.143	595	2375	3058	544	2213	2493	493	2536	3072
tide	0.294	685	2249	2974	573	2303	2881	540	2330	2872
tide	0.300	636	2279	3035	539	2373	3021	481	2385	3021
tide	0.354	603	2225	2698	539	2288	2723	494	2325	2802
tight	0.147	449	2661	2996	417	2698	3021	400	2729	2989
tight	0.156	479	2581	3046	476	2574	3064	476	2691	3134
tight	0.146	528	2536	2989	475	2601	3012	448	2611	2985
tight	0.144	474	2549	2948	432	2637	2971	374	2599	2903
tire	0.312	577	2050	2507	586	1871	2305	554	1756	2235
tire	0.399	641	1885	2296	635	1820	2217	593	1778	2112
tire	0.380	641	1937	2348	629	1897	2242	615	1811	2207
tire	0.193	751	2168	2867	689	2213	2834	631	2227	2782
tire	0.207	780	2099	2776	691	2190	2824	627	2198	2770
tire	0.203	748	2143	2743	699	2211	2769	644	2183	2727
white	0.136	419	2646	3045	382	2748	3057	366	2861	2906
white	0.154	479	2665	2750	428	2795	3104	390	2682	2877
white	0.168	487	2531	2631	420	2622	3012	401	2390	2850
wide	0.316	627	2248	2960	553	2353	2994	476	2351	3004
wide	0.302	621	2277	2924	521	2451	3055	476	2503	3138
wide	0.354	630	2333	2926	512	2446	2914	469	2472	2865
wire	0.357	642	2013	2467	631	1868	2238	607	1766	2105
wire	0.355	584	1853	2266	559	1792	2149	529	1692	2045
wire	0.389	651	1860	2250	636	1810	2155	609	1803	2057
wire	0.199	754	2065	2780	726	2138	2772	693	2167	2746
wire	0.180	780	2066	2735	682	2109	2752	631	2096	2682
wire	0.186	776	2027	2680	738	2123	2693	697	2177	2675

Speaker 5		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
bide	0.243	671	1379	2477	695	1379	2492	716	1304	2438
bide	0.236	614	1423	2641	736	1405	2700	839	1434	2716
bide	0.250	586	1402	2613	621	1420	2543	605	1445	2573
bite	0.166	717	1661	2687	707	1795	2779	654	1947	2861
bite	0.183	701	1632	2717	759	1733	2838	697	1872	2912
bite	0.155	644	1682	2537	666	1829	2664	627	1945	2799
fide	0.251	888	1375	2648	967	1398	2675	925	1426	2743
fide	0.270	711	1424	2362	660	1446	2391	719	1457	2365
fide	0.245	667	1471	2381	763	1462	2379	806	1466	2478
fie-er	0.313	874	1358	2520	861	1617	2655	713	1848	2758
fie-er	0.295	630	1481	2489	662	1567	2542	665	1787	2673

Speaker 5		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
fie-er	0.321	751	1496	2633	882	1619	2665	733	1828	2771
fie-er	0.196	841	1260	2426	858	1353	2523	871	1586	2636
fie-er	0.188	629	1481	2429	632	1486	2427	637	1559	2533
fie-er	0.193	741	1463	2513	876	1515	2627	903	1596	2655
fight	0.147	758	1703	2613	764	1795	2651	656	1899	2811
fight	0.148	776	1765	2754	693	1869	2805	588	2015	2937
fight	0.157	789	1697	2713	679	1823	2820	639	1951	2921
fire	0.266	834	1517	2577	772	1547	2617	722	1682	2690
fire	0.293	802	1636	2685	674	1773	2671	648	1929	2711
fire	0.282	653	1487	2454	760	1602	2505	700	1775	2649
fire	0.185	790	1477	2538	814	1517	2605	775	1550	2616
fire	0.185	832	1583	2628	817	1671	2710	696	1732	2700
fire	0.185	567	1442	2352	722	1516	2433	760	1606	2507
height	0.147	865	2034	2782	827	2176	2912	595	2261	3015
height	0.111	831	2230	2859	734	2227	3063	597	2335	3049
height	0.120	520	2124	2952	524	2224	2938	492	2321	2965
hide	0.199	802	1189	2632	883	1270	2768	926	1492	2868
hide	0.232	870	1368	2396	947	1397	2483	936	1509	2641
hide	0.208	603	1341	2472	784	1435	2598	647	1493	2560
higher	0.319	965	1253	2481	1087	1198	2313	924	1773	2661
higher	0.273	685	1535	2435	705.3	1726	2567	602	1942	2705
higher	0.312	940	1409	2472	885	1802	2673	737	1986	2822
higher	0.207	1105	1213	2424	885	1205	2419	1073	1200	2313
higher	0.203	687	1461	2414	671	1563	2460	762	1769	2610
higher	0.212	963	1514	2536	883	1730	2624	801	1880	2771
hire	0.274	1080	1555	2552	1032	1663	2629	909	1836	2756
hire	0.257	718	1561	2311	902	1799	2831	607	1916	2810
hire	0.291	792	1568	2543	833	1747	2613	615	1900	2827
hire	0.200	1087	1514	2555	1060	1592	2596	1033	1659	2627
hire	0.169	1003	1548	2942	1069	1675	2772	906	1780	2824
hire	0.176	926	1546	2643	872	1600	2560	755	1684	2548
liar	0.280	726	1410	2604	920	1532	2722	786	1678	2862
liar	0.304	906	1573	2793	1013	1581	2737	989	1668	2857
liar	0.353	984	1481	2844	1065	1522	2791	1053	1603	2879
liar	0.191	827	1437	2605	865	1465	2668	866	1579	2750
liar	0.211	893	1553	2811	969	1555	2697	1017	1582	2745
liar	0.213	929	1490	2887	1010	1489	2835	1051	1526	2817
lied	0.243	897	1478	3017	968	1520	2981	981	1571	2952
lied	0.286	819	1452	2861	938	1489	2817	966	1553	2779
lied	0.255	1024	1615	2924	1127	1586	2970	1102	1598	2904
light	0.129	659	1706	3014	670	1830	3050	660	1958	3078
light	0.157	590	1615	2882	595	1735	2884	615	1862	2951
light	0.175	723	1715	2978	724	1816	3003	663	1979	3040

Speaker 5		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
lyre	0.324	1033	1393	2920	1096	1459	2827	1052	1571	2933
lyre	0.324	828	1420	2827	848	1398	2721	844	1325	2747
lyre	0.314	914	1592	2765	948	1592	2734	973	1758	2803
lyre	0.218	972	1490	3004	1051	1406	2863	1093	1446	2822
lyre	0.246	774	1304	2804	709	1360	2780	859	1396	2742
lyre	0.227	875	1427	2734	936	1530	2733	942	1617	2747
mide	0.196	1000	1428	3050	880	1420	3059	812	1458	3129
mide	0.254	1007	1460	2831	1028	1500	2901	974	1490	2858
mide	0.257	1111	1389	3043	1135	1458	3012	1206	1469	3031
might	0.120	590	1784	2960	532	1883	3002	540	1992	2999
might	0.167	459	1716	2878	485	1826	2908	476	1936	2886
might	0.157	786	1636	3013	756	1820	3065	647	1921	3129
mire	0.314	658	1456	2946	719	1463	2915	717	1588	2916
mire	0.289	755	1320	2984	1208	1426	3040	535	1658	2896
mire	0.296	590	1455	3146	634	1600	2879	534	1810	2923
mire	0.219	645	1402	2994	952	1448	2979	726	1463	2912
mire	0.209	534	1292	2914	1219	1351	3020	698	1487	2978
mire	0.188	625	1449	3084	902	1530	2917	799	1621	2863
myer	0.319	1262	1403	2971	1182	1573	2952	673	1762	2965
myer	0.285	621	1417	2962	688	1421	2953	695	1686	2872
myer	0.275	1118	1452	2804	1135	1609	2854	989	1807	2918
myer	0.234	1333	1395	3016	1134	1495	2936	1038	1628	2945
myer	0.186	583	1427	2974	648	1423	2944	690	1421	2953
myer	0.194	1103	1397	2812	1128	1506	2822	1146	1635	2858
shide	0.228	575	1770	2907	616	1655	2720	676	1603	2689
shide	0.240	629	1568	2554	840	1498	2660	823	1504	2871
shide	0.266	564	1558	2659	1055	1558	2631	1038	1525	2631
shire	0.294	543	1721	3151	642	1577	2579	686	1622	2694
shire	0.333	628	1639	2785	617	1596	2618	690	1595	2511
shire	0.323	595	1530	2490	821	1601	2710	682	1725	2748
shire	0.304	671	1540	2662	800	1612	2618	690	1772	2786
shire	0.196	533	1724	3168	637	1586	2531	653	1548	2570
shire	0.330	631	1642	2759	616	1596	2617	691	1596	2510
shire	0.211	564	1598	2696	675	1562	2495	805	1571	2637
shire	0.191	667	1542	2666	768	1576	2613	783	1630	2651
shite	0.148	616	1715	2668	636	1795	2681	666	1927	2789
shite	0.127	679	1927	2763	660	1949	2783	674	2025	2867
shite	0.148	497	1767	2884	575	1853	2930	630	1946	2965
shyer	0.331	767	1546	2331	810	1510	2534	788	1627	2804
shyer	0.304	687	1598	2541	823	1621	2505	779	1824	2646
shyer	0.317	802	1502	2716	954	1557	2611	887	1751	2670
shyer	0.222	729	1590	2381	758	1534	2400	819	1516	2547
shyer	0.209	666	1632	2608	719	1574	2515	835	1623	2515

Speaker 5		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
shyer	0.214	670	1479	2618	863	1501	2548	976	1554	2619
side	0.256	621	1563	2642	676	1557	2579	723	1443	2612
side	0.256	803	1673	2661	856	1434	2628	898	1359	2640
side	0.236	545	1504	2391	654	1474	2499	530	1408	2649
sigher	0.315	754	1486	2503	810	1502	2523	715	1623	2633
sigher	0.295	611	1607	2584	655	1617	2461	665	1744	2736
sigher	0.298	620	1590	2341	658	1555	2283	763	1673	2408
sigher	0.218	730	1465	2498	757	1463	2488	776	1497	2549
sigher	0.199	642	1632	2647	653	1574	2432	658	1618	2461
sigher	0.199	562	1617	2412	637	1586	2291	672	1559	2294
sight	0.148	607	1692	2708	621	1854	2833	617	1973	2888
sight	0.136	672	1789	2725	695	1889	2791	656	2064	2912
sight	0.163	661	1754	2682	646	1855	2777	584	1965	2913
sire	0.316	941	1537	2657	1023	1523	2651	1008	1623	2765
sire	0.333	682	1495	2607	714	1516	2621	744	1695	2687
sire	0.319	927	1492	2711	1040	1590	2705	856	1763	2819
sire	0.230	850	1535	2692	975	1519	2624	1008	1529	2659
sire	0.242	696	1525	2659	738	1489	2597	719	1560	2658
sire	0.202	816	1501	2665	903	1500	2605	1040	1590	2705
tide	0.197	832	1497	2575	992	1552	2648	832	1595	2737
tide	0.255	965	1407	2619	928	1390	2617	902	1404	2602
tide	0.241	1063	1574	2538	1099	1600	2587	1054	1586	2642
tie-er	0.277	1000	1673	2595	945	1912	2836	618	2094	2870
tie-er	0.311	1032	1965	2629	901	1750	2769	707	2066	2889
tie-er	0.319	1029	1649	2706	963	1852	2827	639	2009	2918
tie-er	0.162	1084	1662	2571	971	1715	2610	976	1884	2773
tie-er	0.201	1050	2001	2415	993	1690	2660	905	1737	2778
tie-er	0.188	1103	1651	2710	937	1676	2692	958	1798	2799
tight	0.112	645	2069	2965	532	2110	3013	509	2163	3000
tight	0.122	620	1995	2899	567	2188	2998	534	2265	3010
tight	0.132	580	1982	2819	571	2174	2993	528	2347	2976
tire	0.259	872	1773	2615	608	1900	2744	614	2057	2702
tire	0.260	1026	1696	2706	964	1873	2753	680	1976	2822
tire	0.269	675	1524	2678	695	1606	2807	662	1736	2822
tire	0.157	797	1720	2592	780	1816	2606	626	1862	2739
tire	0.168	1052	1655	2703	1024	1719	2701	977	1833	2742
tire	0.194	688	1526	2683	791	1562	2695	707	1616	2792

Speaker 5		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
bide	0.243	903	1348	2579	898	1630	2581	691	1797	2668
bide	0.236	852	1467	2675	806	1559	2739	785	1690	2806
bide	0.250	651	1515	2578	826	1637	2726	682	1732	2829

Speaker 5		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
bite	0.166	604	2168	2878	503	2332	2900	466	2446	2845
bite	0.183	586	2044	2987	487	2193	2995	480	2433	3024
bite	0.155	628	2070	2944	556	2199	2956	500	2392	2904
fide	0.251	999	1477	2748	987	1604	2845	872	1762	2904
fide	0.270	780	1453	2525	691	1573	2489	787	1762	2735
fide	0.245	878	1535	2604	806	1592	2784	720	1778	2865
fie-er	0.313	565	2051	2704	484	2077	2645	521	2056	2525
fie-er	0.295	624	1975	2713	565	2056	2642	553	2020	2446
fie-er	0.321	687	1937	2879	548	1982	2831	514	1899	2709
fie-er	0.196	768	1774	2727	689	1869	2766	581	2013	2691
fie-er	0.188	718	1674	2597	637	1810	2665	628	1959	2707
fie-er	0.193	741	1715	2714	710	1836	2792	665	1884	2822
fight	0.147	596	2076	2921	522	2197	2964	478	2361	2949
fight	0.148	498	2245	3022	504	2440	2978	423	1526	2742
fight	0.157	568	2156	2957	502	2248	2936	455	2419	2921
fire	0.266	702	1816	2728	622	1896	2665	592	1971	2663
fire	0.293	593	2051	2694	523	2027	2316	518	1905	2245
fire	0.282	691	1967	2777	617	2051	2863	589	2092	2795
fire	0.185	720	1623	2627	737	1726	2760	701	1829	2704
fire	0.185	720	1890	2713	634	1937	2717	617	2015	2689
fire	0.185	670	1684	2609	698	1823	2702	691	1963	2778
height	0.147	494	2430	2986	456	2551	3002	410	2601	2965
height	0.111	476	2455	3105	466	2495	3081	428	2573	3089
height	0.120	483	2392	2976	427	2553	2990	407	2604	3032
hide	0.199	798	1679	2888	809	1852	2922	638	2053	2985
hide	0.232	956	1640	2780	812	1773	2818	638	1938	2995
hide	0.208	702	1574	2619	807	1714	2745	731	1871	2809
higher	0.319	686	2001	2894	546	2080	2701	477	2008	2300
higher	0.273	630	2117	2870	483	2143	2693	502	2115	2487
higher	0.312	593	2169	2903	509	2213	2791	502	2184	2683
higher	0.207	970	1545	2368	882	1842	2759	699	1985	2872
higher	0.203	614	1908	2692	636	2066	2722	611	2171	2791
higher	0.212	691	2086	2861	596	2168	2897	531	2191	2853
hire	0.274	850	2037	2834	615	2064	2846	553	2187	2738
hire	0.257	579	2020	2887	524	2123	2807	489	2054	2580
hire	0.291	546	1994	2828	503	1997	2732	554	1894	2558
hire	0.200	953	1788	2695	862	1980	2811	839	2057	2844
hire	0.169	635	1832	2818	606	1934	2828	586	2004	2875
hire	0.176	725	1828	2730	615	1900	2829	534	1976	2847
liar	0.280	661	1895	3039	602	1965	2954	542	2133	2911
liar	0.304	882	1838	2987	639	2046	2963	526	2229	2860
liar	0.353	814	1805	2935	570	2024	2861	499	2060	2732
liar	0.191	800	1674	2839	702	1845	3035	624	1936	3003

Speaker 5		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
liar	0.211	1023	1633	2801	960	1728	2939	792	1872	2992
liar	0.213	1084	1569	2841	1045	1610	2886	915	1759	2926
lied	0.243	979	1644	2992	949	1771	2998	774	1903	3033
lied	0.286	992	1641	2780	923	1690	2842	846	1855	2893
lied	0.255	1088	1615	2964	1011	1683	2944	886	1708	3009
light	0.129	617	2074	2878	570	2193	2338	488	2398	2523
light	0.157	611	1978	3063	513	2181	3080	507	2371	3022
light	0.175	535	2146	3023	491	2385	3057	435	2543	3016
lyre	0.324	790	1859	2910	583	2073	2849	526	2155	2610
lyre	0.324	824	1665	2759	739	1797	2734	643	1978	2730
lyre	0.314	745	1795	2821	718	1938	2768	603	2022	2675
lyre	0.218	1103	1541	2903	1049	1679	2924	823	1856	2916
lyre	0.246	856	1420	2753	801	1584	2778	850	1711	2803
lyre	0.227	933	1705	2776	858	1748	2762	802	1819	2841
mide	0.196	848	1569	3052	936	1668	2987	783	1853	2975
mide	0.254	880	1569	2866	876	1719	2859	837	1887	2988
mide	0.257	1169	1531	2995	1133	1630	2929	889	1764	2927
might	0.120	523	2166	3027	499	2284	3026	447	2323	2966
might	0.167	452	2106	2870	428	2203	2842	436	2450	2798
might	0.157	627	2096	3081	594	2389	3078	488	2476	2991
mire	0.314	615	1767	2934	583	1799	2865	567	1929	2598
mire	0.289	586	1842	2882	484	1975	2695	535	2041	2497
mire	0.296	509	1924	2775	480	2039	2577	446	1915	2388
mire	0.219	777	1546	2901	673	1669	2918	616	1767	2934
mire	0.209	522	1683	2892	615	1794	2875	551	1865	2717
mire	0.188	559	1801	2889	522	1861	2724	506	1931	2763
myer	0.319	555	2022	2922	532	2080	2709	486	2004	2526
myer	0.285	625	1911	2806	568	2054	2850	524	2115	2726
myer	0.275	581	2002	2880	535	2144	2822	442	2047	2637
myer	0.234	674	1763	2965	568	1947	2962	542	2035	2850
myer	0.186	688	1517	2914	734	1764	2861	631	1902	2806
myer	0.194	1055	1773	2907	626	1897	2898	578	2048	2865
shide	0.228	741	1611	2792	647	1665	2757	582	1809	2879
shide	0.240	953	1608	2672	940	1675	2706	859	1797	2765
shide	0.266	1003	1547	2672	940	1647	2738	792	1807	2926
shire	0.294	708	1735	2751	556	1822	2667	569	1927	2469
shire	0.333	758	1934	2780	575	2058	2604	534	2066	2768
shire	0.323	617	1882	2823	560	1931	2786	504	2002	2732
shire	0.304	632	1912	2812	635	2002	2729	537	1934	2457
shire	0.196	679	1615	2684	674	1677	2718	634	1764	2729
shire	0.330	762	1932	2781	577	2057	2575	536	2066	2780
shire	0.211	735	1667	2801	662	1749	2789	601	1892	2849
shire	0.191	727	1717	2791	663	1830	2804	619	1922	2808

Speaker 5		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
shite	0.148	643	2019	2863	588	2220	2972	513	2383	2959
shite	0.127	591	2125	2892	554	2303	2956	493	2451	2982
shite	0.148	600	2111	3023	514	2286	3029	492	2400	3000
shyer	0.331	701	1778	2644	618	1971	2752	571	1941	2268
shyer	0.304	681	1987	2726	588	2134	2784	473	2082	2535
shyer	0.317	675	1827	2740	492	1696	2484	548	1760	2315
shyer	0.222	778	1582	2608	758	1649	2758	702	1786	2654
shyer	0.209	795	1769	2594	692	1895	2707	666	2017	2730
shyer	0.214	887	1635	2574	826	1779	2705	687	1843	2735
side	0.256	779	1551	2715	699	1595	2747	650	1724	2750
side	0.256	868	1336	2645	904	1520	2735	864	1684	2787
side	0.236	582	1459	2625	480	1580	2623	590	1648	2845
sigher	0.315	693	1937	2812	574	2020	2772	489	2067	2610
sigher	0.295	668	1911	2763	607	2001	2737	570	1995	2508
sigher	0.298	689	1893	2670	575	2050	2728	535	2080	2466
sigher	0.218	775	1624	2604	745	1835	2721	652	1984	2821
sigher	0.199	676	1688	2591	651	1791	2725	667	1919	2761
sigher	0.199	741	1648	2351	733	1729	2514	686	1905	2682
sight	0.148	588	2180	2944	493	2266	2997	485	2375	2986
sight	0.136	564	2192	2572	490	2341	2426	491	2464	2829
sight	0.163	499	2140	3007	490	2382	3023	464	2553	3005
sire	0.316	914	1816	2844	716	2020	2845	556	2040	2690
sire	0.333	717	1840	2686	576	1939	2666	548	1938	2555
sire	0.319	629	1879	2899	587	1960	2770	565	2070	2623
sire	0.230	1021	1597	2740	936	1764	2805	744	1843	2870
sire	0.242	743	1692	2680	772	1833	2722	643	1924	2732
sire	0.202	938	1646	2815	794	1799	2843	637	1875	2885
tide	0.197	743	1623	2792	683	1714	2936	626	1834	2860
tide	0.255	949	1683	2716	896	1718	2784	763	1865	2945
tide	0.241	1049	1659	2668	925	1725	2776	803	1920	2912
tie-er	0.277	556	2210	2856	495	2186	2619	494	2028	2394
tie-er	0.311	510	2171	2698	473	2192	2386	485	2093	2292
tie-er	0.319	550	2196	2910	482	2199	2551	491	2132	2261
tie-er	0.162	823	1990	2816	618	2089	2871	620	2184	2879
tie-er	0.201	743	1921	2788	663	2107	2858	535	2151	2673
tie-er	0.188	740	1921	2828	639	2009	2917	607	2142	2913
tight	0.112	476	2268	2975	454	2497	3044	398	2602	3142
tight	0.122	497	2448	2998	434	2675	3004	409	2139	2938
tight	0.132	473	2517	3002	417	2621	2995	418	2462	2877
tire	0.259	557	2114	2701	551	2181	2500	480	2018	2286
tire	0.260	541	2071	2757	540	2037	2628	535	1994	2569
tire	0.269	588	1879	2923	514	1951	2861	448	2009	2788
tire	0.157	588	2003	2879	612	2060	2706	561	2108	2670

Speaker 5		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
tire	0.168	797	1908	2797	672	1983	2825	617	2104	2799
tire	0.194	662	1710	2812	634	1805	2916	570	1902	2891

Speaker 5		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
bide	0.243	626	1973	2830	582	2192	3048	503	2357	3178
bide	0.236	582	1868	2909	602	2024	2969	503	2033	3058
bide	0.250	576	1977	2888	520	2111	2950	458	2199	3024
bite	0.166	418	2738	2833	383	1762	2820	394	2764	3098
bite	0.183	401	2546	2941	374	2664	2958	405	2563	2930
bite	0.155	459	2510	3001	431	2552	2936	390	2488	2940
fide	0.251	712	1917	3013	583	2211	3057	504	2315	3093
fide	0.270	704	1947	2891	628	2148	3068	506	2241	3244
fide	0.245	659	1968	2988	554	2122	3068	527	2225	3127
fie-er	0.313	479	1889	2013	506	1872	2011	440	1851	1963
fie-er	0.295	537	1902	2213	506	1790	2086	477	1770	2063
fie-er	0.321	530	1905	2727	489	1851	2241	455	1747	2655
fie-er	0.196	561	2039	2708	481	2080	2641	541	2114	2492
fie-er	0.188	591	2034	2737	580	2061	2641	547	2028	2437
fie-er	0.193	668	1947	2805	576	1978	2824	508	1925	2706
fight	0.147	460	2522	2992	428	2562	2976	416	2636	2981
fight	0.148	403	2712	2915	389	2700	2982	399	2622	2878
fight	0.157	429	2526	2922	421	2304	2891	435	2281	2876
fire	0.266	497	1856	2360	508	1884	2347	491	1798	2112
fire	0.293	553	2013	2487	510	1742	1999	453	1847	1949
fire	0.282	549	1944	2422	516	1870	2296	529	1835	2249
fire	0.185	609	1917	2680	636	1963	2614	570	1928	2642
fire	0.185	548	2043	2585	523	2028	2320	521	1951	2211
fire	0.185	616	2021	2837	617	2082	2844	594	2093	2803
height	0.147	432	2686	2994	454	2684	3002	450	2652	3050
height	0.111	399	2225	2888	404	2290	2680	413	2260	2605
height	0.120	415	2682	2973	400	2768	3028	361	2530	2930
hide	0.199	556	2213	2989	508	2283	2797	440	2402	2878
hide	0.232	610	2115	3058	559	2190	3076	495	2251	3157
hide	0.208	637	2039	2981	543	2142	3007	540	2203	3050
higher	0.319	491	1907	2200	471	1837	1920	456	1731	1967
higher	0.273	515	2054	2223	499	1970	2054	437	1772	2088
higher	0.312	480	2102	2683	503	2006	2481	457	1927	2693
higher	0.207	603	2065	2780	494	2045	2588	470	2027	2369
higher	0.203	473	2133	2669	504	2129	2499	520	2082	2328
higher	0.212	502	2218	2778	503	2178	2606	492	2105	2654
hire	0.274	546	2059	2540	481	1756	2431	447	1738	2236
hire	0.257	495	1975	2458	495	1896	2034	485	1833	2189

Speaker 5		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
hire	0.291	531	1953	2533	488	1911	3009	440	1799	2786
hire	0.200	654	2084	2853	617	2134	2785	553	2206	2649
hire	0.169	522	2096	2898	513	2122	2772	492	2075	2610
hire	0.176	525	2016	2853	495	2045	2827	526	2125	2736
liar	0.280	492	2057	2412	519	1875	2105	488	1791	2104
liar	0.304	498	2067	2532	514	1929	2455	509	1869	2210
liar	0.353	482	1955	2266	476	1802	2119	487	1815	1998
liar	0.191	605	1936	2945	560	2096	2975	514	2171	3125
liar	0.211	642	2010	2979	526	2160	2912	505	2266	2795
liar	0.213	675	1834	2914	565	1971	2901	537	2113	2838
lied	0.243	552	2002	2947	525	2160	2865	504	2160	3118
lied	0.286	744	2051	2893	544	2258	2977	532	2346	3111
lied	0.255	644	1969	3059	553	2151	2974	576	2223	3062
light	0.129	481	2079	2536	419	2646	2743	426	2336	2769
light	0.157	458	2582	3038	419	1662	2760	408	2214	2871
light	0.175	420	2581	3013	415	2564	2971	412	2597	3088
lyre	0.324	495	1994	2485	523	1919	2183	463	1852	2198
lyre	0.324	496	1946	2452	491	1841	2226	489	1734	2043
lyre	0.314	533	2013	2218	527	1866	2077	480	1765	2060
lyre	0.218	742	2018	2943	553	2058	2707	526	2142	2616
lyre	0.246	740	1839	2753	662	1964	2749	549	1907	2553
lyre	0.227	722	1930	2773	633	2003	2816	532	2058	2312
mide	0.196	644	2069	2982	606	2189	2945	526	2318	3014
mide	0.254	631	2092	3007	585	2355	3020	510	2411	3058
mide	0.257	540	1928	2898	546	2083	3005	493	2293	3079
might	0.120	430	2498	3035	446	2563	3033	429	2432	3008
might	0.167	423	2672	2839	403	2664	3030	423	1380	2736
might	0.157	447	2536	2962	465	2199	2940	464	1970	2922
mire	0.314	486	1891	2317	469	1766	2174	505	1744	2158
mire	0.289	584	2152	2252	555	2062	3319	566	1338	2051
mire	0.296	498	1815	2027	547	1816	2183	446	1629	2013
mire	0.219	566	1884	2899	537	1920	2805	571	1921	2565
mire	0.209	506	1984	2684	540	2077	2527	537	2042	2220
mire	0.188	472	2008	2636	459	2014	2453	448	1920	2378
myer	0.319	468	1981	2327	513	1851	2359	452	1765	1896
myer	0.285	494	2034	2438	476	1880	2190	478	1786	1969
myer	0.275	445	1967	2464	478	1937	2125	496	1752	2097
myer	0.234	504	2002	2590	487	1983	2528	462	1882	2378
myer	0.186	574	2001	2830	567	2085	2841	531	2111	2748
myer	0.194	516	2135	2837	472	2017	2724	442	2024	2556
shide	0.228	615	2022	3002	498	2161	3169	520	2260	3231
shide	0.240	656	1956	2851	585	2100	2959	492	2269	3047
shide	0.266	604	2036	2994	550	2219	3004	490	2349	3037

Speaker 5		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
shire	0.294	602	1956	2437	489	1845	2270	535	1769	2155
shire	0.333	522	1955	2350	500	1855	2526	529	1885	2634
shire	0.323	517	1936	2043	516	1808	2033	471	1887	3119
shire	0.304	522	1893	2215	518	1814	2180	453	1802	2101
shire	0.196	550	1807	2646	560	1882	2633	596	1969	2468
shire	0.330	528	1965	2405	496	1848	2479	527	1872	2384
shire	0.211	586	1892	2827	533	1908	2709	493	2014	2528
shire	0.191	637	2020	2666	583	2005	2712	539	1936	2451
shite	0.148	445	2538	3022	413	2555	2937	422	2580	2818
shite	0.127	438	2512	2989	401	2560	2949	414	2211	2916
shite	0.148	415	2528	2980	430	2690	3091	402	2620	3059
shyer	0.331	511	1846	2096	539	1818	1877	488	1781	1991
shyer	0.304	500	1958	2379	504	1882	2250	525	1865	2191
shyer	0.317	523	1884	2480	455	1755	2161	453	1757	1831
shyer	0.222	647	1925	2753	574	1950	2556	563	1919	2238
shyer	0.209	603	2073	2788	497	2103	2687	483	2042	2502
shyer	0.214	603	1737	2621	542	1674	2497	546	1755	2334
side	0.256	613	1928	2877	542	2127	2964	559	2233	3115
side	0.256	724	1897	2877	606	2160	2985	483	2307	3099
side	0.236	472	1801	2796	477	2020	3025	484	2150	3099
sigher	0.315	512	2065	2435	522	1941	2311	452	1793	2295
sigher	0.295	532	1873	2275	508	1793	2175	473	1714	2100
sigher	0.298	472	1987	2338	457	1845	2210	458	1777	2072
sigher	0.218	597	2009	2791	515	2089	2610	501	2025	2522
sigher	0.199	613	1991	2744	596	2010	2633	568	1988	2477
sigher	0.199	584	1957	2609	572	2052	2576	532	2081	2444
sight	0.148	495	2563	2887	469	2532	2952	474	2395	2905
sight	0.136	470	2596	2962	413	2718	2764	378	2149	2833
sight	0.163	422	2624	2993	444	2388	2927	396	2227	2885
sire	0.316	516	1900	2485	484	1800	2199	457	1754	2163
sire	0.333	505	1942	2355	472	1763	2299	448	1708	2223
sire	0.319	540	1930	2289	501	1856	2148	493	1822	2078
sire	0.230	708	2016	2839	587	1993	2728	522	1957	2548
sire	0.242	584	1953	2666	563	1936	2564	555	1863	2439
sire	0.202	639	1970	2952	584	2007	2742	564	2031	2583
tide	0.197	612	2033	3044	544	2071	3104	511	2245	3139
tide	0.255	652	1977	2998	578	2227	3008	483	2305	2975
tide	0.241	684	2110	2996	524	2243	2870	461	2209	2431
tie-er	0.277	494	1974	2213	434	1822	2158	418	1865	2191
tie-er	0.311	467	1858	2110	469	1975	2018	423	1895	1959
tie-er	0.319	500	1973	2056	460	1734	2140	427	1890	2167
tie-er	0.162	538	2231	2828	491	2191	2594	487	2174	2618
tie-er	0.201	472	2156	2571	472	2117	2387	479	2136	2261

Speaker 5		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
tie-er	0.188	525	2210	2887	488	2243	2664	488	2103	2546
tight	0.112	383	2740	2975	396	2468	2695	416	2592	2963
tight	0.122	431	1950	2971	393	1814	2924	385	1842	2961
tight	0.132	433	2394	2800	434	2213	2917	406	2365	2940
tire	0.259	494	1718	2125	492	1752	2201	495	1767	2010
tire	0.260	481	1924	2414	454	1893	2272	449	1800	2260
tire	0.269	447	1986	2645	441	1931	2328	474	1770	2208
tire	0.157	565	2146	2700	555	2277	2478	517	1975	2303
tire	0.168	558	2060	2740	542	2039	2631	542	2013	2570
tire	0.194	514	1951	2861	449	1969	2829	471	2022	2794

Speaker 6		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
died	0.343	782	1549	2862	760	1424	2579	722	1369	2434
died	0.407	756	1562	2930	851	1392	2689	857	1331	2359
died	0.402	757	1474	2595	798	1304	2488	752	1271	2497
dight	0.209	693	1665	2815	733	1508	2673	652	1751	2629
dight	0.209	704	1693	2956	738	1765	2655	711	1838	2791
dight	0.224	644	1695	2860	656	1718	2842	649	1815	2883
dire	0.500	782	1657	3089	869	1700	3069	708	1913	2815
dire	0.409	834	1677	2831	827	1701	2990	738	2059	2828
dire	0.481	758	1604	1860	867	1415	1720	710	1609	3044
dire	0.254	688	1650	2975	790	1648	3103	770	1466	2206
dire	0.197	601	1865	2890	773	1698	2814	865	1694	2797
dire	0.200	602	1696	2925	802	1681	2888	834	1823	2865
dire	0.219	634	1600	2881	746	1591	2083	850	1603	1770
dire	0.223	613	1627	3065	676	1488	2468	748	1484	2164
dyer	0.423	802	1699	2752	813	1657	2609	651	1974	2584
dyer	0.558	834	1641	2893	836	1641	2759	716	2011	2690
dyer	0.479	681	1475	2462	795	1538	2007	680	1610	2350
dyer	0.255	685	1712	2908	784	1596	2893	760	1558	2820
fied	0.341	745	1244	2510	802	1299	2552	817	1351	2721
fied	0.403	808	1256	2645	860	1301	2617	860	1324	2648
fied	0.349	746	1317	2509	734	1303	2698	703	1307	2708
fie-er	0.482	781	1559	2614	683	1903	2648	500	2237	2731
fie-er	0.428	802	1491	2557	696	1819	2563	541	2206	2642
fie-er	0.486	785	1427	2367	737	1796	2731	617	2214	2770
fie-er	0.209	754	1441	2566	759	1535	2575	801	1658	2649
fie-er	0.233	763	1431	2562	803	1503	2582	710	1655	2531
fie-er	0.211	661	1372	2806	766	1417	2769	832	1499	2681
fight	0.179	760	1532	2594	769	1637	2596	721	1778	2575
fight	0.174	719	1486	2623	785	1575	2730	747	1651	2687
fight	0.162	705	1550	2711	736	1712	2694	707	1892	2662

Speaker 6		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
fire	0.434	814	1477	2542	767	1658	2513	623	1984	2627
fire	0.465	836	1425	2570	765	1556	2721	586	1623	2528
fire	0.435	732	1465	2229	720	1618	2695	653	1906	2505
fire	0.203	786	1487	2600	808	1464	2500	853	1536	2539
fire	0.198	752	1311	2577	802	1370	2435	826	1464	2592
fire	0.213	668	1401	2545	723	1470	2110	744	1507	2490
height	0.161	764	1722	2753	764	1898	2779	690	1862	2844
height	0.158	819	1720	2658	740	1966	2688	653	2254	2773
height	0.124	710	1944	2846	674	2070	2793	586	2311	2737
hide	0.285	782	1366	2642	783	1436	2699	838	1495	2211
hide	0.234	876	1188	3087	888	1127	2922	961	1318	2976
hide	0.324	842	1331	2661	894	1413	2656	868	1451	2736
higher	0.449	914	1489	2647	783	1733	2722	623	1996	2615
higher	0.496	967	1423	2834	859	1621	2699	642	1858	2784
higher	0.455	767	1376	2077	852	1461	2664	705	1719	2712
higher	0.231	861	1373	2609	902	1477	2697	867	1582	2670
higher	0.262	905	1371	2685	968	1430	2846	885	1497	2675
higher	0.236	707	1276	2801	753	1380	2400	858	1407	2579
hire	0.402	728	1655	2475	613	2005	2654	528	1996	2447
hire	0.407	612	1525	2574	554	1698	2666	559	2085	2704
hire	0.429	902	1573	2569	722	1855	2557	554	1741	2498
hire	0.193	747	1564	2264	726	1659	2533	677	1794	2543
hire	0.171	528	1561	2456	611	1538	2570	591	1694	2518
hire	0.184	969	1463	2575	907	1546	2567	889	1671	2581
liar	0.455	866	1381	2836	839	1344	2881	775	1700	2861
liar	0.451	859	1298	3016	831	1500	2882	741	1743	2865
liar	0.411	688	1432	2983	703	1602	1976	641	1827	2772
liar	0.248	747	1389	2960	865	1382	2839	847	1339	2874
liar	0.234	768	1375	3350	840	1296	3052	868	1362	2850
liar	0.218	666	1346	3113	681	1432	3018	780	1540	3171
lied	0.327	743	1327	3138	875	1332	2940	1020	1362	2945
lied	0.317	657	1137	3173	728	1170	3030	766	1281	2954
lied	0.357	699	1308	3069	823	1287	2869	822	1308	2924
light	0.162	735	1519	2877	775	1679	2876	703	1944	2833
light	0.186	708	1511	3067	749	1701	2981	708	1888	2848
light	0.162	799	1534	3265	818	1638	3082	801	1778	3154
lyre	0.441	700	1449	2971	651	1519	2822	598	1902	2966
lyre	0.494	694	1382	2880	705	1538	2783	692	1905	2687
lyre	0.192	623	1411	3112	691	1428	3064	739	1535	2923
lyre	0.195	630	1335	3215	688	1395	2940	682	1408	2774
mide	0.432	748	1295	2993	892	1291	3158	758	1451	2888
mide	0.387	785	1329	3051	920	1367	3053	701	1416	2603
mide	0.391	544	1323	2966	689	1314	2915	561	1300	2976

Speaker 6		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
might	0.136	676	1558	2805	676	1720	2481	671	1885	2750
might	0.186	818	1556	2977	851	1669	2877	766	1752	2888
might	0.176	814	1591	2825	786	1719	2892	752	1837	2768
mire	0.464	774	1433	2883	889	1627	2959	685	2064	2917
mire	0.393	981	1352	3084	1031	1430	3003	862	1600	2994
mire	0.426	922	1477	2601	945	1605	2676	840	1696	2794
mire	0.235	818	1472	2851	773	1433	2882	879	1477	2913
mire	0.236	822	1325	2992	995	1365	3051	1042	1414	2988
mire	0.265	836	1445	2774	983	1523	2767	964	1590	2662
myer	0.489	973	1426	2772	968	1515	2679	750	1797	2553
myer	0.461	526	1168	2764	492	1550	2895	488	1862	2660
myer	0.415	585	1313	2776	587	1560	2753	589	1949	2709
myer	0.261	809	1389	3139	972	1425	2771	920	1405	2672
myer	0.233	516	1235	2793	521	1130	2776	483	1514	2941
myer	0.220	531	1272	2695	556	1326	2787	568	1271	2765
shire	0.414	780	1505	2429	681	1381	2688	687	1660	2175
shire	0.421	813	1482	2639	898	1495	2811	811	1702	2658
shire	0.459	781	1532	2850	846	1633	2594	688	1978	2575
shire	0.228	688	1468	2735	730	1480	2375	687	1419	2712
shire	0.236	631	1501	2711	813	1485	2611	864	1454	2811
shire	0.192	640	1610	2890	745	1623	2803	798	1565	2690
shite	0.186	621	1533	2823	716	1464	2761	719	1604	2420
shite	0.209	658	1466	2852	755	1617	2712	723	1769	2670
shite	0.180	682	1589	2997	769	1550	2900	740	1349	2816
shyer	0.456	720	1288	2564	760	1460	2666	642	1865	2683
shyer	0.481	680	1278	2626	737	1498	2755	592	2056	2615
shyer	0.446	751	1483	2946	744	1552	2396	654	1860	2699
shyer	0.219	686	1433	2924	714	1309	2582	711	1359	2637
shyer	0.222	686	1359	2679	675	1283	2624	712	1146	2584
shyer	0.215	685	1504	2650	771	1488	2224	824	1493	2524
side	0.417	770	1484	2751	880	1369	2829	836	1367	2767
side	0.350	697	1427	2752	846	1440	3024	820	1401	2842
side	0.423	869	1360	2734	788	1274	2747	882	1324	2661
sigher	0.491	800	1697	2925	703	1808	2845	499	2161	2790
sigher	0.465	898	1483	2969	809	1615	2890	647	2154	2705
sigher	0.510	747	1018	2761	622	1968	2512	465	2120	2610
sigher	0.220	870	1446	2930	849	1420	2912	887	1533	2830
sight	0.141	719	1773	2862	713	1844	2774	666	1965	2782
sight	0.197	623	1701	2860	697	1737	2840	630	2012	2812
sight	0.143	689	1728	2752	674	1806	2736	654	1926	2716
sire	0.445	872	1594	2743	847	1733	2705	690	2149	2711
sire	0.415	851	1553	2852	844	1669	2746	665	2046	2693
sire	0.430	784	1439	2707	912	1558	2924	752	1848	2523

Speaker 6		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
sire	0.213	742	1627	2943	795	1688	2944	823	1682	2928
sire	0.228	869	1622	2826	873	1595	2745	832	1642	2715
sire	0.243	756	1539	2998	906	1565	2749	865	1648	2742
sire	0.224	727	1553	2835	811	1442	2720	830	1430	2702
sire	0.233	729	1295	2805	721	1036	2761	623	1662	2736
tide	0.326	828	1258	2615	943	1388	2544	826	1457	2534
tide	0.275	562	1101	2637	516	1031	2571	870	1573	2829
tide	0.300	749	1215	2693	746	1239	2683	734	1316	2679
tie-er	0.536	690	1653	1910	519	2326	2758	433	2593	2922
tie-er	0.425	728	1748	2656	610	2087	2437	503	2334	2821
tie-er	0.374	725	1454	2610	686	1772	2713	576	1813	2542
tie-er	0.179	816	1565	2621	764	1576	2593	689	1719	2239
tie-er	0.196	751	1598	2974	729	1691	2842	731	1830	2734
tie-er	0.212	837	1554	2680	717	1525	2896	691	1646	2666
tight	0.133	764	1799	2777	715	1965	2770	642	2159	2807
tight	0.177	704	1786	2920	696	1861	3024	663	1644	2492
tight	0.132	716	1644	2981	676	1782	2996	645	2054	2989
tire	0.467	969	1503	2740	715	1517	2519	581	2330	2583
tire	0.403	854	1653	2746	711	2068	2794	540	2367	2873
tire	0.366	838	1603	2710	721	2119	2709	554	2391	2917
tire	0.207	940	1429	2872	937	1380	2693	869	1676	2658
tire	0.203	873	1492	2808	837	1684	2806	710	1658	2370
tire	0.173	870	1491	2850	819	1597	2727	786	1676	2750
white	0.165	602	1212	2719	643	1482	2692	597	1594	2583
white	0.159	587	1215	2379	606	1489	2626	596	1695	2737
white	0.170	570	1104	2598	664	1359	2652	658	1598	2695
whyer	0.214	604	1033	2600	743	1178	2649	796	1227	2664
whyer	0.238	728	1170	2767	789	1327	2640	837	1513	2549
wide	0.364	709	1101	2762	831	1245	2868	867	1476	2894
wide	0.321	679	1097	2919	766	1222	2856	946	1388	2836
wide	0.393	768	1167	2567	754	1275	2376	805	1231	2540
wire	0.223	730	1136	2592	858	1326	2520	899	1506	2552
wire	0.216	670	1129	2422	706	1279	2423	711	1410	2302
wire	0.224	641	1114	2788	735	1360	2785	745	1572	2803
wire	0.203	644	1026	2726	771	1220	2370	812	1369	2529

Speaker 6		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
died	0.343	736	1415	2616	697	1523	2704	729	1798	3040
died	0.407	791	1437	3156	844	1586	3061	748	1858	2958
died	0.402	807	1392	2531	818	1583	2499	717	1970	2741
dight	0.209	621	1835	2729	395	2047	2783	459	2616	2698
dight	0.209	651	1902	2791	554	2139	2752	451	2310	2670

Speaker 6		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
dight	0.224	577	2516	2986	500	2604	3105	373	2610	3064
dire	0.500	538	2169	2961	534	2106	2845	487	1793	2218
dire	0.409	583	2026	2711	564	2109	2762	491	2055	2446
dire	0.481	650	2025	3294	498	1944	2491	528	2024	2793
dire	0.254	822	1546	2315	689	1690	2815	687	1936	2762
dire	0.197	838	1678	2653	786	1719	2569	746	1869	2705
dire	0.200	827	1660	2946	808	1721	2964	756	1899	2797
dire	0.219	889	1480	1622	844	1365	2655	771	1619	3185
dire	0.223	778	1517	2114	757	1592	2580	698	1660	2381
dyer	0.423	549	2108	2569	513	2078	2326	529	1960	2182
dyer	0.558	601	2397	3033	536	2271	2752	485	1864	2385
dyer	0.479	576	2126	2483	497	1640	2257	475	2009	2961
dyer	0.255	993	1703	3018	745	1502	2679	719	1742	2780
fied	0.341	802	1400	2813	650	1589	2627	634	1792	2845
fied	0.403	816	1358	2628	830	1737	3328	718	1951	2824
fied	0.349	823	1482	2912	615	1632	2665	548	2129	2849
fie-er	0.482	460	2172	2628	479	1906	2250	472	1766	2129
fie-er	0.428	481	2145	2487	532	1892	2410	533	1848	2109
fie-er	0.486	436	2150	2818	475	2202	2390	471	1683	2134
fie-er	0.209	716	1744	2666	630	2021	2656	545	2171	2733
fie-er	0.233	691	1966	2596	604	2293	2546	509	2269	2661
fie-er	0.211	783	1541	2836	713	1734	2717	632	2007	2765
fight	0.179	652	1909	2531	507	2182	2766	475	2336	2785
fight	0.174	685	1780	2689	593	2064	2760	472	2398	2797
fight	0.162	613	2094	2679	543	2261	2735	451	2641	2709
fire	0.434	420	1992	2504	480	1903	2202	589	1781	2298
fire	0.465	560	2172	2739	544	1947	2348	541	1895	2330
fire	0.435	518	2132	2614	491	1971	2423	468	1759	2343
fire	0.203	773	1608	2436	677	1760	2530	618	1966	2577
fire	0.198	843	1488	2568	770	1586	2725	682	1971	2392
fire	0.213	715	1617	2688	727	1740	2670	646	1906	2523
height	0.161	689	2112	2854	645	2341	2908	482	2624	2962
height	0.158	500	2367	2844	465	2461	2824	366	2571	2839
height	0.124	502	2433	2819	467	2611	2980	441	2576	2788
hide	0.285	816	1704	2751	662	1851	2936	645	2086	2957
hide	0.234	1032	1161	2702	848	1587	2740	756	1637	2668
hide	0.324	852	1872	2761	740	2147	2799	634	2295	2792
higher	0.449	482	2096	2490	521	2043	2460	472	1931	2138
higher	0.496	536	2371	2773	551	2338	3391	546	2144	2588
higher	0.455	603	2213	2638	472	2508	2606	441	2172	2501
higher	0.231	785	1731	2721	706	1915	2747	625	2010	2599
higher	0.262	839	1626	2706	711	1944	2787	620	1817	2722
higher	0.236	811	1515	2681	756	1692	2726	728	1982	2687

Speaker 6		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
hire	0.402	529	2041	2392	534	1866	2230	535	1772	2124
hire	0.407	467	2043	2587	438	2035	2263	448	2004	3178
hire	0.429	507	1790	2415	495	1751	2309	470	1830	2210
hire	0.193	610	2015	2664	564	1989	2616	529	2004	2439
hire	0.171	557	1677	2753	596	1840	2744	610	2016	2877
hire	0.184	765	1759	2625	690	2008	2578	604	2211	2700
liar	0.455	611	2247	2713	542	2336	2679	532	2028	2716
liar	0.451	618	2131	2778	542	2035	2514	522	1896	2320
liar	0.411	543	2069	2349	505	1579	2060	462	1931	2257
liar	0.248	850	1408	2975	826	1579	2882	756	1704	2812
liar	0.234	832	1483	2851	832	1637	2935	746	1741	2870
liar	0.218	679	1641	2311	666	1737	2761	634	1937	2751
lied	0.327	953	1410	2923	750	1366	2986	546	1773	2709
lied	0.317	765	1370	2976	666	1646	2904	618	1912	2824
lied	0.357	870	1412	2852	838	1601	2765	678	1784	2909
light	0.162	680	2236	2844	563	2222	2747	483	2408	2508
light	0.186	577	1998	2934	508	2360	2853	424	2420	2855
light	0.162	737	1957	3056	587	2176	2881	518	2382	3067
lyre	0.441	518	2318	3041	513	2006	2500	509	1917	2265
lyre	0.494	585	2064	2624	442	1869	2513	468	2077	2195
lyre	0.192	792	1610	3025	679	1536	2859	625	1648	2754
lyre	0.195	724	1472	3127	707	1544	2789	730	1638	2946
mide	0.432	703	1728	2849	544	1976	2635	536	2093	2785
mide	0.387	627	1624	2860	584	2039	2897	586	2241	2911
mide	0.391	577	1622	2889	597	1987	3135	565	2179	2729
might	0.136	648	2070	2798	539	2367	2943	482	2493	2854
might	0.186	709	2051	2815	620	2339	2837	471	2495	2881
might	0.176	628	2095	2878	568	2619	2690	497	2543	3044
mire	0.464	558	2318	2530	517	2042	2329	417	1728	2065
mire	0.393	764	1840	2756	584	2178	2788	528	1235	2337
mire	0.426	690	2029	2699	565	2100	2620	532	1939	2406
mire	0.235	885	1634	2939	766	1849	3020	681	2071	2913
mire	0.236	1013	1519	3046	844	1600	2987	876	1706	2981
mire	0.265	852	1628	2787	805	1735	2658	739	1945	2669
myer	0.489	567	2372	2712	491	2108	2473	520	1832	2402
myer	0.461	405	2170	2767	432	2308	2640	399	2043	2342
myer	0.415	488	2146	2664	418	2162	2281	443	1982	2179
myer	0.261	970	1531	2822	851	1648	2672	746	1990	2599
myer	0.233	489	1549	2899	532	1532	2714	485	1851	2664
myer	0.220	591	1561	2758	602	1650	2619	578	1957	2696
shire	0.414	628	1891	2557	559	1801	2498	530	2018	2234
shire	0.421	649	1964	2674	571	2063	2621	542	1898	2382
shire	0.459	605	2069	2568	546	1943	2452	543	1798	2225

Speaker 6		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
shire	0.228	688	1443	2715	759	1609	2188	591	1626	2606
shire	0.236	910	1516	2752	817	1627	2711	703	1781	2588
shire	0.192	821	1535	2656	846	1635	2592	781	1708	2438
shite	0.186	716	1812	2505	685	1828	2704	608	1833	2666
shite	0.209	591	1853	2700	520	2086	2759	454	2454	2786
shite	0.180	693	1762	2908	622	1910	2796	566	2330	2801
shyer	0.456	497	2171	3011	456	2079	2256	464	1735	2150
shyer	0.481	522	2461	2838	535	1933	2390	551	1949	2365
shyer	0.446	524	2141	2611	439	2000	2529	519	1812	2299
shyer	0.219	747	1450	2688	675	1642	2435	603	1825	2724
shyer	0.222	733	1417	2774	697	1694	2537	623	1956	2476
shyer	0.215	740	1562	2354	740	1738	2687	654	1859	2698
side	0.417	884	1517	2810	806	1770	2791	631	2041	2824
side	0.350	781	1541	3019	726	1581	2902	651	1698	2792
side	0.423	809	1417	2638	851	1618	2485	709	1818	2519
sigher	0.491	469	2273	3028	516	1927	2215	506	1860	2072
sigher	0.465	479	2161	2338	451	2118	2608	459	1983	2259
sigher	0.510	398	2239	2682	430	1902	2405	440	2096	2115
sigher	0.220	840	1662	2915	723	1716	2721	672	2054	2726
sight	0.141	559	2107	2750	515	2290	2768	479	2492	2688
sight	0.197	583	2334	2841	505	2510	2992	447	2641	2996
sight	0.143	587	2069	2738	532	2469	2895	469	2587	3036
sire	0.445	510	2152	2665	489	1889	2441	437	1673	2133
sire	0.415	586	2118	2671	501	1652	2379	496	2061	2112
sire	0.430	579	2199	2614	507	2316	2433	474	1931	2426
sire	0.213	721	1788	2906	674	1980	2417	543	2090	2880
sire	0.228	845	1740	2706	770	1887	2694	689	2150	2712
sire	0.243	759	1777	2760	665	2046	2698	605	2109	2762
sire	0.224	845	1615	2823	777	1745	2526	662	1793	2543
sire	0.233	651	1969	2496	565	1963	2790	512	2124	2749
tide	0.326	823	1621	2551	781	1907	2694	637	1909	2769
tide	0.275	491	1526	2823	707	1795	2798	563	1933	2850
tide	0.300	761	1466	2707	900	1735	2814	743	1871	2789
tie-er	0.536	487	1954	2276	495	1901	2012	479	1802	1936
tie-er	0.425	473	2179	3439	493	1376	2427	476	1188	1956
tie-er	0.374	485	2192	2449	497	2134	2405	515	1852	2252
tie-er	0.179	671	1734	2733	556	1883	2700	511	2561	3040
tie-er	0.196	650	2073	2959	571	2230	2958	528	2208	2894
tie-er	0.212	644	1742	2636	648	1709	2557	525	2017	2476
tight	0.133	583	2342	2785	509	2372	2804	458	2362	2783
tight	0.177	577	2160	2838	523	2571	3104	435	2613	3099
tight	0.132	581	2358	3527	510	1739	2661	472	2554	3038
tire	0.467	471	1942	2470	504	2055	2324	508	1909	2153

Speaker 6		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
tire	0.403	495	2474	2818	551	1890	2470	557	1627	2160
tire	0.366	479	2303	2633	499	2296	2376	476	1786	2182
tire	0.207	715	1478	2526	713	2033	2673	618	2510	2533
tire	0.203	714	2133	2792	575	2304	2793	515	2458	2798
tire	0.173	720	2166	2710	620	2379	2744	553	2393	2913
white	0.165	559	1778	2613	514	2435	2880	451	2563	2717
white	0.159	542	1938	2593	478	2520	2667	424	2596	2661
white	0.170	648	2110	2612	529	2416	2793	479	2452	2842
whyer	0.214	881	1423	2662	824	1639	2348	763	1805	2464
whyer	0.238	809	1743	2614	718	2063	2754	617	2210	2748
wide	0.364	775	1639	2740	725	1829	2833	624	2094	2803
wide	0.321	896	1571	2906	842	1764	2857	688	1956	2811
wide	0.393	823	1269	2496	634	1741	2501	594	2099	2695
wire	0.223	843	1683	2555	770	1897	2549	650	2003	2694
wire	0.216	721	1572	2127	680	1642	2817	645	1711	2653
wire	0.224	720	1694	2792	652	1660	2708	611	1883	2705
wire	0.203	792	1530	2715	761	1677	2691	672	1689	2597

Speaker 6		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
died	0.343	611	1984	2841	520	2192	2876	432	2315	2834
died	0.407	642	2047	2886	536	2281	2849	482	2360	3014
died	0.402	616	2342	2852	526	2426	2902	474	2379	2881
dight	0.209	406	2294	2755	378	2608	3101	343	2475	2898
dight	0.209	448	2531	2801	440	2633	3276	407	2678	3274
dight	0.224	338	2594	3121	309	2622	3264	328	2505	3064
dire	0.500	452	1167	2004	440	1896	1923	389	1814	2089
dire	0.409	473	1900	2570	462	2018	2113	502	1976	2897
dire	0.481	407	1799	2313	300	1878	2201	274	1787	2284
dire	0.254	574	2042	2756	525	2118	2727	528	2262	2655
dire	0.197	647	2107	2712	590	2175	2539	544	2137	2558
dire	0.200	681	2016	2752	623	2045	2714	574	2147	2727
dire	0.219	742	1645	2445	687	1864	2485	628	1241	2259
dire	0.223	633	1684	2524	501	1952	2526	497	2118	2500
dyer	0.423	528	1942	2122	486	1551	2037	409	1860	2100
dyer	0.558	480	1519	2298	435	1990	2191	386	1998	2092
dyer	0.479	517	1715	2084	352	1902	2249	823	1946	3172
dyer	0.255	719	2146	2996	637	2401	2834	598	2460	3126
fied	0.341	703	2155	2876	410	2405	2878	295	2264	3095
fied	0.403	628	2425	2827	533	2610	2851	510	2353	3093
fied	0.349	488	2238	2821	473	2495	3035	398	2404	2961
fie-er	0.482	428	1692	2093	489	1903	2090	281	1944	2150
fie-er	0.428	520	1772	2124	510	1834	2179	471	1621	2073

Speaker 6		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
fie-er	0.486	407	2029	2035	439	1940	2144	331	2023	2379
fie-er	0.209	493	2253	2724	462	2349	2668	461	2218	2636
fie-er	0.233	476	2229	2428	488	1951	2373	525	1850	2421
fie-er	0.211	618	2220	2758	519	2288	2806	437	2211	2825
fight	0.179	450	2452	2680	406	2494	2807	378	2561	2809
fight	0.174	436	2357	2862	359	2659	2819	359	2610	2830
fight	0.162	416	2601	2852	355	2598	3075	316	2363	2887
fire	0.434	575	1717	2205	600	1774	2264	515	1694	2140
fire	0.465	504	1863	2233	477	1937	2115	435	1902	1979
fire	0.435	442	1780	2082	391	1814	2184	373	1906	2019
fire	0.203	571	2076	2669	536	2325	2787	326	2021	2570
fire	0.198	615	1710	2533	566	2161	2653	557	2170	2625
fire	0.213	585	1960	2609	515	2147	2624	503	2303	2601
height	0.161	449	2718	3245	398	2718	3373	362	2712	2978
height	0.158	360	2616	2979	331	2634	3067	327	2546	2906
height	0.124	386	2622	2974	350	2640	3004	353	2597	3103
hide	0.285	548	2214	2933	517	2451	3052	460	2526	3152
hide	0.234	627	2015	2587	615	2210	2804	495	2364	2859
hide	0.324	541	2469	2821	486	2494	2924	487	2460	3024
higher	0.449	477	1894	2072	435	1846	2215	373	1938	2313
higher	0.496	525	1007	2196	481	1706	2151	358	1722	2130
higher	0.455	416	1655	2203	411	1907	2469	383	1825	2356
higher	0.231	515	2135	2594	486	2117	2488	459	2039	2424
higher	0.262	588	2305	2830	535	2355	3123	537	2265	2449
higher	0.236	593	2030	2654	568	2297	2641	522	2508	2787
hire	0.402	478	1564	2042	517	1767	1957	516	1797	2194
hire	0.407	461	1876	1981	245	1835	2268	337	1877	2099
hire	0.429	455	1867	2190	420	1805	2382	316	1812	2415
hire	0.193	530	2088	2553	529	2019	2408	529	1927	2341
hire	0.171	551	2081	2711	513	2128	2731	460	2039	2593
hire	0.184	552	1734	2495	502	1704	2472	492	1870	2419
liar	0.455	522	2067	2264	485	1625	2093	392	1750	2207
liar	0.451	446	1816	2215	401	1593	2182	326	1641	2225
liar	0.411	478	1884	2179	441	1948	2902	339	2034	2249
liar	0.248	657	2155	2750	567	2318	2581	539	2381	2561
liar	0.234	670	1939	2815	613	2131	2765	562	2084	2656
liar	0.218	589	2200	2627	522	2071	2559	494	1941	2212
lied	0.327	570	2199	2717	464	2138	2784	448	2246	2713
lied	0.317	555	2202	2806	475	2237	2703	448	2405	2598
lied	0.357	604	2544	3025	539	2462	2994	462	2426	3140
light	0.162	431	2528	2891	393	2614	2862	366	2640	3461
light	0.186	402	2642	2724	373	2681	3099	379	2648	2994
light	0.162	475	2416	3207	409	2573	3308	403	2522	3129

Speaker 6		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
lyre	0.441	465	2050	2153	440	1608	2145	409	1893	1955
lyre	0.494	446	1801	2377	351	1902	2501	245	1900	2437
lyre	0.192	600	1900	2966	470	1959	2622	526	2289	3001
lyre	0.195	693	1751	2692	695	1996	2747	621	2035	2749
mide	0.432	534	2186	2922	446	2272	2843	417	2363	3142
mide	0.387	537	2360	2896	411	2147	2590	412	2440	3310
mide	0.391	434	2399	3002	477	2601	3123	441	2450	2982
might	0.136	470	2641	3019	456	2634	3069	368	2653	3167
might	0.186	432	2622	2914	400	2637	3146	345	2635	3410
might	0.176	442	2562	2976	376	2557	3072	352	2556	3120
mire	0.464	200	1842	2461	286	1835	2497	209	1882	2506
mire	0.393	484	1655	2096	409	1680	2099	345	1823	2132
mire	0.426	551	1809	2197	527	1865	2087	457	1839	2202
mire	0.235	603	2188	2845	547	2241	2505	500	2048	2480
mire	0.236	725	2083	2775	625	2290	2812	568	2406	2613
mire	0.265	607	2102	2668	565	2100	2620	532	1953	2523
myer	0.489	469	1682	2386	482	1344	2116	353	1731	2317
myer	0.461	433	2058	2966	360	1760	2101	330	1970	2322
myer	0.415	452	1621	2091	353	1733	2052	406	2138	3361
myer	0.261	637	2293	2719	527	2383	2897	482	2279	2614
myer	0.233	537	2113	2861	408	2173	2767	446	2358	2644
myer	0.220	488	2068	2615	467	2138	2603	410	1957	2503
shire	0.414	518	1866	2107	522	1662	1958	493	1703	2024
shire	0.421	520	1794	2135	472	1779	2030	405	1829	2138
shire	0.459	544	1870	2023	530	1543	1848	441	1912	2278
shire	0.228	616	1901	2577	579	1905	2586	564	1809	2504
shire	0.236	655	1931	2628	619	1990	2630	571	2058	2621
shire	0.192	697	1893	2488	619	1919	2470	608	2019	2597
shite	0.186	508	1931	2710	475	2240	2851	418	2544	2800
shite	0.209	415	2575	3069	344	2568	2927	326	2529	2982
shite	0.180	447	2352	2617	403	2573	2885	345	2502	3077
shyer	0.456	478	1799	2107	456	1909	2095	450	1901	2194
shyer	0.481	496	1797	2148	506	1717	2141	329	1963	2151
shyer	0.446	471	1857	2265	452	1919	2237	484	1932	2250
shyer	0.219	560	2037	2716	510	2094	2799	458	2130	2725
shyer	0.222	571	2251	2518	564	2193	2587	531	1874	2517
shyer	0.215	619	2058	2647	550	2203	2614	521	2266	2574
side	0.417	530	2343	2829	461	2316	2821	430	2353	3083
side	0.350	530	779	2589	487	1885	2540	492	2499	3410
side	0.423	583	2076	2765	486	2229	2848	406	2242	3076
sigher	0.491	521	1837	2053	556	1834	2054	537	1844	2178
sigher	0.465	467	1779	2577	458	2049	3503	403	1945	2076
sigher	0.510	446	1875	2270	432	2032	2460	383	1876	2460

Speaker 6		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
sigher	0.220	540	2359	2677	491	1681	2577	452	2114	2577
sight	0.141	431	2573	2856	357	2539	2739	325	2416	2568
sight	0.197	376	2582	3002	376	2462	3422	228	2094	2903
sight	0.143	422	2539	2849	366	2568	2901	358	2572	3111
sire	0.445	429	1787	2032	410	1726	2109	371	1672	2049
sire	0.415	495	1485	2047	460	1803	2015	365	1887	2156
sire	0.430	536	1772	2040	444	1450	2238	396	1893	2183
sire	0.213	500	2228	2956	480	2318	3052	469	2274	3032
sire	0.228	529	2171	2613	512	2153	2647	490	1986	2463
sire	0.243	568	2298	2414	505	1682	2414	501	1977	2365
sire	0.224	585	1908	2587	538	2131	2645	489	2126	2623
sire	0.233	474	2263	3051	457	2389	2793	445	2342	3027
tide	0.326	582	2185	2765	534	2202	2844	467	2409	2977
tide	0.275	540	2097	2873	415	2259	2921	449	2339	3072
tide	0.300	625	2235	2851	469	2335	2880	408	2385	2915
tie-er	0.536	441	1674	2104	432	1697	2032	352	1702	2283
tie-er	0.425	454	1152	2063	436	2041	3433	385	1948	2000
tie-er	0.374	494	1657	2189	480	1607	2061	396	1417	2165
tie-er	0.179	485	1793	2701	457	2592	2804	425	2489	3017
tie-er	0.196	488	2407	2758	476	2335	3066	482	2244	3382
tie-er	0.212	508	2208	2534	452	2149	2398	497	2133	2401
tight	0.133	398	2521	2788	402	2489	2752	327	2536	2907
tight	0.177	403	2657	3253	371	2697	3327	364	2562	2774
tight	0.132	446	2612	3164	399	2636	3191	384	2687	3123
tire	0.467	430	1786	2053	443	1632	2161	361	1851	2182
tire	0.403	538	1573	1978	526	1350	2113	524	1015	2218
tire	0.366	469	1814	2029	494	1671	2063	485	1655	2166
tire	0.207	543	2260	2746	477	2286	2820	481	2006	2496
tire	0.203	505	2442	2911	491	2457	2880	523	766	2350
tire	0.173	470	2113	2618	478	2321	2640	497	2218	2710
white	0.165	369	2625	3231	345	2628	3388	321	2580	3317
white	0.159	382	2565	3016	344	2527	2873	287	2584	2764
white	0.170	455	2615	3191	340	2566	3334	360	2575	3404
whyer	0.214	683	1934	2636	583	1949	2576	522	2097	2548
whyer	0.238	540	2383	2693	450	2391	2763	431	2313	2597
wide	0.364	551	2267	2871	470	2376	2921	436	2317	2896
wide	0.321	621	2183	2807	513	2337	2818	446	2392	2939
wide	0.393	570	2332	2830	486	2342	2960	446	2347	3271
wire	0.223	579	2080	2851	567	2098	2666	554	1973	2413
wire	0.216	644	2201	2621	613	2042	2423	598	2031	2326
wire	0.224	587	2373	2718	542	2171	3158	486	1675	2635
wire	0.203	649	2043	2657	590	2282	2522	531	2023	2554

Speaker 7		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
bide	0.292	884	1336	2847	862	1213	2887	905	1139	3002
bide	0.275	892	1434	2813	962	1393	2988	980	1439	2873
bide	0.280	862	1444	2703	968	1425	2815	963	1437	2826
bite	0.144	775	1629	2648	834	1816	2757	810	1997	2806
bite	0.176	901	1620	2727	913	1767	2791	881	2052	2947
bite	0.188	878	1606	2786	901	1746	2751	897	1923	2769
fide	0.306	914	1387	2752	994	1380	2881	984	1313	2856
fide	0.310	943	1381	2763	938	1357	2837	932	1359	2873
fide	0.284	904	1242	2786	905	1293	2802	946	1313	2751
fie-er	0.424	943	1428	2700	958	1484	2864	945	1698	2822
fie-er	0.438	904	1392	2791	914	1388	2891	931	1454	2869
fie-er	0.456	887	1281	2851	1017	1219	2892	928	1615	2785
fie-er	0.257	935	1404	2730	940	1430	2740	955	1456	2815
fie-er	0.305	904	1396	2792	881	1345	2821	904	1384	2899
fie-er	0.262	895	1309	2742	953	1491	2859	811	1108	2800
fight	0.166	851	1677	2908	859	1849	2839	794	2015	2866
fight	0.153	851	1566	2848	912	1697	2830	886	1879	2866
fight	0.173	895	1551	2881	939	1666	2956	851	1922	3018
fire	0.237	897	1513	2723	892	1628	2753	875	1884	2723
fire	0.309	967	1612	2813	929	1793	2778	757	1968	2714
fire	0.286	899	1568	2639	864	1863	2706	790	2083	2682
fire	0.228	897	1523	2718	891	1627	2751	875	1850	2723
fire	0.220	950	1586	2825	966	1686	2781	903	1820	2753
fire	0.193	895	1314	2751	878	1633	2712	858	1874	2714
height	0.119	968	1980	2757	890	2074	2824	892	2206	2795
height	0.140	881	2068	2992	879	2137	2802	731	2122	2929
height	0.136	871	1940	2898	881	2026	2870	843	2172	2830
hide	0.284	982	1367	3045	1004	1400	3048	1035	1461	3081
hide	0.234	979	1462	2834	1020	1541	2936	1000	1581	2865
hide	0.261	1077	1421	2900	1060	1468	3081	1048	1480	3060
higher	0.380	937	1379	2932	998	1428	3062	947	1722	2831
higher	0.340	1048	1281	2880	1061	1497	2894	922	1928	2924
higher	0.349	1043	1501	2908	1014	1556	2750	924	1917	2878
higher	0.260	965	1472	3017	999	1436	3049	984	1451	3034
higher	0.256	1015	1423	2844	1056	1350	2913	996	1780	3068
higher	0.243	1050	1505	2910	1056	1526	2853	1007	1597	2751
hire	0.312	1024	1440	2874	1046	1541	2936	943	1883	2913
hire	0.337	994	1471	2890	1025	1467	2944	1004	1688	2859
hire	0.254	920	1909	2768	839	2053	2863	675	2215	2833
hire	0.236	1025	1436	2870	1033	1567	2978	1077	1315	2822
hire	0.226	987	1465	2888	1010	1450	2944	1028	1497	2946
hire	0.218	920	1861	2799	905	1977	2982	758	2078	2808
liar	0.391	982	1386	3105	1007	1411	2971	979	1521	3032

Speaker 7		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
liar	0.414	896	1620	3161	1013	1282	3070	974	1352	3119
liar	0.335	960	1587	3013	1043	1491	2890	1040	1559	3036
liar	0.276	966	1411	3108	945	1108	3082	998	1433	2981
liar	0.290	881	1634	3181	936	1336	2980	990	1301	3073
liar	0.274	951	1586	3171	1035	1519	2996	1047	1499	3113
lied	0.273	909	1539	3326	959	1483	3294	960	1460	3498
lied	0.298	897	1598	3076	973	1441	3152	977	1444	3137
lied	0.288	924	1490	3090	942	1433	3159	945	1442	3082
light	0.183	850	1612	3332	891	1728	3200	879	1832	3065
light	0.168	811	1706	3121	852	1733	3051	832	1866	2878
light	0.178	751	1454	3053	836	1301	3107	892	1686	3160
lyre	0.340	913	1472	3048	984	1423	2904	1010	1528	2974
lyre	0.343	959	1532	3083	1026	1508	3129	1013	1571	3143
lyre	0.341	910	1542	3115	963	1300	3118	1027	1487	3320
lyre	0.214	900	1543	3064	989	1459	3002	996	1431	2919
lyre	0.257	957	1535	3081	1017	1523	3064	1018	1538	3117
lyre	0.271	905	1570	3100	934	1430	3154	992	1322	3057
mide	0.242	933	1377	3208	904	1358	3254	897	1408	3308
mide	0.280	730	1593	3077	750	1495	3122	793	1575	3338
mide	0.282	770	1363	3157	763	1464	3000	719	1462	3245
might	0.180	936	1652	2958	962	1820	2972	913	1963	3108
might	0.144	817	1569	2987	860	1644	3137	874	1757	2955
might	0.178	843	1606	3004	811	1834	3064	767	2023	2991
mire	0.353	937	1413	3216	982	1437	3198	1031	1520	3009
mire	0.278	861	1453	3199	827	1469	3254	844	1619	3007
mire	0.354	722	1366	3174	797	1500	3048	811	1867	2974
mire	0.254	919	1398	3204	957	1421	3305	977	1435	3160
mire	0.272	854	1439	3156	826	1470	3263	840	1578	3055
mire	0.232	731	1244	3035	789	1469	3122	809	1532	3056
myer	0.375	921	1451	2940	862	1493	2953	875	1321	2888
myer	0.336	833	1408	2980	822	1298	3057	865	1515	3053
myer	0.298	836	1510	2980	898	1646	2961	836	1773	3020
myer	0.282	900	1414	2901	884	1474	3040	875	1479	3022
myer	0.265	818	1422	2968	867	1429	3050	840	1415	3054
myer	0.266	827	1495	2982	901	1653	2893	862	1744	2985
shide	0.284	832	1259	2661	927	1660	2755	938	1346	2654
shide	0.284	645	1170	2939	917	1545	2874	966	1477	2715
shide	0.288	914	1873	2777	922	1535	2854	980	1493	2832
shire	0.384	924	1644	2754	971	1556	2869	954	1621	2850
shire	0.360	885	1267	2557	958	1443	2642	949	1558	2648
shire	0.285	906	1865	2763	913	1704	2772	924	1722	2727
shire	0.260	906	1528	2804	949	1586	2851	979	1552	2881
shire	0.236	858	950	2723	850	1251	2626	959	1463	2641

Speaker 7		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
shire	0.245	901	1988	2770	904	1729	2790	921	1706	2741
shite	0.151	715	1269	2718	772	1690	3059	798	1845	2978
shite	0.159	643	1637	2928	837	1807	2934	869	2311	2998
shite	0.127	673	1279	2728	796	2124	2735	882	2010	2975
shyer	0.368	932	1670	2784	1002	1564	2910	987	1633	2748
shyer	0.335	875	1405	2709	890	1358	2694	964	1345	2721
shyer	0.346	895	1835	2597	911	1219	2716	999	1149	2594
shyer	0.252	753	945	2642	946	1656	2704	1002	1563	2909
shyer	0.247	871	1577	2848	894	1443	2838	913	1401	2729
shyer	0.270	894	1836	2598	782	1102	2538	676	1114	2484
side	0.301	913	1666	2879	1002	1561	2870	917	1453	2877
side	0.274	915	1590	2853	939	1561	2768	957	1493	2804
side	0.293	899	1625	2771	999	1623	2898	1013	1498	2798
sigher	0.413	921	1559	2637	969	1378	2717	956	1513	2775
sigher	0.379	935	1494	2730	1021	1299	2688	937	1424	2685
sigher	0.421	935	1432	2906	904	1167	2910	1020	1107	2781
sigher	0.257	906	1588	2765	981	1496	2649	971	1412	2716
sigher	0.283	932	1497	2817	979	1418	2760	1023	1306	2689
sigher	0.306	957	1589	2923	944	1418	3006	982	1276	2944
sight	0.171	778	1773	3003	854	1797	3001	839	1983	2904
sight	0.191	830	1715	2939	921	1800	2912	886	1937	3008
sight	0.132	751	1713	2921	792	1882	2925	798	1930	3071
sire	0.345	971	1570	2909	988	1497	2964	1013	1571	2864
sire	0.349	901	1538	3017	932	1593	2910	956	1565	2709
sire	0.313	860	1770	2809	923	1821	2768	825	1950	2679
sire	0.216	869	1524	2849	984	1559	2912	982	1511	2928
sire	0.245	694	975	2779	928	1517	2731	950	1594	2884
sire	0.219	849	1768	2857	902	1693	2805	903	1824	2780
tide	0.259	883	1509	3029	991	1246	3030	952	1504	3074
tide	0.225	867	1412	3011	951	1429	2987	1000	1518	2980
tide	0.235	958	1484	2732	974	1523	2718	997	1580	2661
tie-er	0.434	931	1489	2848	936	1598	2825	852	1929	2861
tie-er	0.324	1101	1559	2873	978	1740	3028	819	1967	2872
tie-er	0.324	946	1272	2703	956	1268	2639	908	1602	2620
tie-er	0.223	942	1533	2852	931	1496	2859	936	1565	2826
tie-er	0.203	1105	1551	2896	1094	1617	2885	980	1740	3034
tie-er	0.228	953	1284	2690	951	1251	2640	940	1545	2613
tight	0.110	892	2186	2958	880	2164	2979	842	2045	2850
tight	0.132	858	2546	2890	826	2203	2877	704	2278	2935
tight	0.129	937	2159	3040	912	2096	2913	831	2097	2847
tire	0.269	960	1765	2826	911	1940	2705	765	2050	2748
tire	0.263	927	2047	2716	752	2149	2756	606	2294	2729
tire	0.301	876	1813	2893	873	1801	2828	613	2338	2814

Speaker 7		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
tire	0.185	990	1710	2852	980	1770	2881	939	1843	2832
tire	0.184	952	1946	2499	921	2043	2738	785	2120	2754
tire	0.167	868	1812	2898	902	1791	2782	868	1792	2820
white	0.140	776	1441	2938	819	1667	3002	815	1859	2915
white	0.181	705	1273	3016	845	1461	2881	847	1732	2806
white	0.155	705	1215	2971	798	1414	2965	841	1559	2836
whyer	0.241	678	930	2623	752	1138	2834	726	1118	2722
whyer	0.243	891	1254	3134	920	1358	2287	940	1529	2708
whyer	0.260	651	961	2703	884	1195	2773	861	1214	2654
wide	0.298	755	990	3164	761	1137	2650	816	1162	2816
wide	0.288	691	926	2712	812	1167	2787	926	1108	2796
wide	0.280	757	1040	3089	769	1155	2940	1009	1138	2751
wire	0.189	774	1121	3125	871	1235	3017	896	1469	2947
wire	0.218	832	1207	3095	876	1338	3019	891	1539	2864
wire	0.225	739	1196	2682	879	1421	2735	867	1595	2662

Speaker 7		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
bide	0.292	891	1199	2802	977	1517	2745	928	1692	2739
bide	0.275	961	1506	2890	998	1588	2801	1001	1757	2726
bide	0.280	981	1472	2823	987	1571	2903	981	1740	2797
bite	0.144	729	2114	2879	652	2251	3031	526	2426	3130
bite	0.176	797	2170	3044	663	2344	3088	549	2539	3079
bite	0.188	812	2124	2819	610	2326	2897	512	2479	2980
fide	0.306	990	1360	2877	998	1548	2882	931	1751	2802
fide	0.310	938	1403	2900	1001	1563	2734	955	1793	2696
fide	0.284	963	1365	2826	984	1345	2773	929	1680	2775
fie-er	0.424	775	1947	2679	657	2070	2623	631	1892	2492
fie-er	0.438	906	1783	2763	680	2199	2767	557	2266	2714
fie-er	0.456	787	2129	2770	605	2222	2677	613	1994	2510
fie-er	0.257	965	1560	2930	944	1698	2817	907	1898	2704
fie-er	0.305	932	1402	2844	909	1588	2984	892	1405	2777
fie-er	0.262	964	1453	2922	938	1539	2799	877	1840	2775
fight	0.166	695	2176	2956	600	2396	2964	510	2533	3006
fight	0.153	772	2050	2915	622	2275	3042	502	2440	2961
fight	0.173	717	2202	2976	599	2422	3050	579	2611	3019
fire	0.237	862	1971	2663	813	2000	2567	719	2039	2545
fire	0.309	638	1975	2530	608	2013	2376	594	1970	2157
fire	0.286	658	2162	2645	630	2163	2545	609	2004	2478
fire	0.228	863	1950	2681	821	1986	2540	737	2045	2581
fire	0.220	771	1968	2707	674	1782	2567	617	2155	2274
fire	0.193	819	2016	2764	703	2116	2692	654	2168	2637

Speaker 7		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
height	0.119	834	2340	3113	706	2374	3080	622	2399	3070
height	0.140	612	2367	2964	529	2482	3009	464	2583	2993
height	0.136	731	2282	2953	632	2437	2993	546	2434	3060
hide	0.284	1003	1621	3036	1001	1718	2926	896	1909	2910
hide	0.234	1006	1640	2852	993	1734	2863	950	1863	2863
hide	0.261	1054	1499	3021	1005	1690	2922	893	2006	3054
higher	0.380	767	1971	2847	685	2146	2802	623	2077	2717
higher	0.340	623	2190	3007	560	2288	3000	570	2116	2690
higher	0.349	678	2269	2835	563	2417	2873	553	2216	2820
higher	0.260	954	1697	2877	902	1920	2906	742	2050	2839
higher	0.256	896	1968	2800	634	2168	2996	560	2300	3029
higher	0.243	938	1868	2846	800	2062	2929	613	2189	2780
hire	0.312	808	2068	2747	678	2224	2693	612	2146	2658
hire	0.337	863	1962	2837	654	2211	2819	615	2181	2653
hire	0.254	602	2127	2712	582	2199	2707	631	1952	2462
hire	0.236	914	1949	2861	805	2075	2738	682	2226	2712
hire	0.226	1007	1677	2859	942	1857	2830	746	2097	2888
hire	0.218	657	2206	2857	603	2128	2715	580	2209	2702
liar	0.391	925	1736	2892	744	2021	2797	668	2192	2859
liar	0.414	954	1424	3067	814	1967	2937	670	2241	2906
liar	0.335	952	1675	2882	811	2073	2946	691	2104	2841
liar	0.276	985	1541	3010	990	1742	2872	837	2000	2897
liar	0.290	953	1284	3135	980	1281	3157	918	1695	2961
liar	0.274	1016	1600	3037	923	1697	2887	830	2002	2970
lied	0.273	955	1463	3271	974	1597	3181	951	1737	3216
lied	0.298	973	1453	3132	972	1605	2942	949	1786	2937
lied	0.288	947	1555	3047	939	1730	3003	903	1891	2988
light	0.183	800	1996	3176	675	2258	3030	546	2472	3072
light	0.168	799	1978	3003	710	2163	3127	605	2337	3104
light	0.178	868	1870	3069	751	2045	3099	654	2282	3167
lyre	0.340	935	1721	2767	811	1907	2623	705	1905	2453
lyre	0.343	996	1737	3007	814	1966	2841	667	2127	2850
lyre	0.341	945	1693	2882	845	2204	2775	735	2259	2891
lyre	0.214	991	1440	2974	1000	1574	2921	960	1696	2798
lyre	0.257	1007	1545	3113	996	1733	3007	840	1925	2896
lyre	0.271	1004	1535	3179	941	1705	2879	850	2028	2828
mide	0.242	940	1481	3220	998	1665	3116	990	1866	3039
mide	0.280	875	1562	3114	901	1671	3084	835	1846	2920
mide	0.282	816	1551	3128	858	1631	3067	806	1811	3023
might	0.180	854	2142	3136	666	2318	3049	560	2551	3088
might	0.144	837	1926	3085	745	2080	3050	687	2261	3061
might	0.178	762	2228	2978	672	2392	3108	627	2534	3191
mire	0.353	980	1729	2866	884	1964	2640	713	2084	2591

Speaker 7		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
mire	0.278	790	1879	2887	751	2080	2819	619	2002	2486
mire	0.354	696	2132	2957	606	2218	2698	575	2053	2543
mire	0.254	1029	1517	3010	1010	1670	3029	920	1863	2947
mire	0.272	814	1868	2904	780	2102	2777	638	2024	2578
mire	0.232	828	1667	3014	775	1976	2914	688	2136	2935
myer	0.375	859	1938	2742	759	2049	2632	708	2095	2656
myer	0.336	901	1535	2852	848	1779	2780	747	2012	2699
myer	0.298	737	2100	2898	677	2188	2781	642	2103	2785
myer	0.282	876	1322	2888	880	1947	2789	786	2011	2743
myer	0.265	878	1585	3063	909	1644	2835	824	1667	2798
myer	0.266	773	1930	2972	709	2225	2871	664	2106	2783
shide	0.284	1006	1547	2706	1023	1694	2736	971	1822	2774
shide	0.284	992	1564	2823	988	1573	2797	896	1821	2782
shide	0.288	991	1492	2804	947	1697	2844	901	1914	2915
shire	0.384	898	1843	3073	749	2093	2890	620	1756	2532
shire	0.360	845	1902	2638	738	2070	2612	648	2006	2499
shire	0.285	874	1884	2730	783	1955	2747	659	2064	2715
shire	0.260	951	1576	2920	900	1644	2849	890	1873	3271
shire	0.236	967	1490	2629	944	1624	2624	846	1895	2642
shire	0.245	907	1788	2738	864	1954	2741	760	1968	2754
shite	0.151	745	2015	3097	660	2455	3119	542	2352	3016
shite	0.159	846	2211	2983	762	2378	2972	688	2303	3036
shite	0.127	856	2046	2947	728	2086	2975	644	2229	2990
shyer	0.368	926	1876	2757	727	1933	2762	627	2063	2578
shyer	0.335	976	1530	2686	846	1817	2726	710	2144	2638
shyer	0.346	902	1550	2630	767	2016	2833	662	2300	2704
shyer	0.252	1007	1563	2819	964	1686	2732	925	1893	2786
shyer	0.247	966	1331	2730	987	1427	2678	873	1112	2588
shyer	0.270	947	1421	2663	898	1586	2596	800	1999	2771
side	0.301	946	1459	2875	962	1494	2737	1000	1692	2781
side	0.274	968	1501	2803	947	1599	2759	886	1834	2716
side	0.293	943	1399	2820	968	1573	2891	955	1671	2722
sigher	0.413	864	1834	2519	725	1949	2481	652	2003	2297
sigher	0.379	920	1677	2640	762	2039	2684	614	2192	2600
sigher	0.421	918	1829	2784	703	2187	2775	613	2071	2581
sigher	0.257	977	1471	2761	936	1538	2655	880	1746	2530
sigher	0.283	932	1424	2724	936	1550	2691	909	1808	2636
sigher	0.306	879	1160	2922	938	1629	2803	891	1942	2757
sight	0.171	753	2090	2950	653	2337	2932	544	2502	2956
sight	0.191	752	2097	3039	598	2300	3031	505	2435	3009
sight	0.132	758	2149	2946	684	2289	2956	609	2395	3045
sire	0.345	975	1779	2744	877	1886	2524	743	1887	2396
sire	0.349	974	1665	2676	851	1918	2760	772	2048	2647

Speaker 7		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
sire	0.313	713	2036	2625	579	2050	2584	581	1916	2425
sire	0.216	1001	1517	2890	1022	1619	2840	1007	1731	2792
sire	0.245	964	1548	2683	980	1563	2701	954	1689	2704
sire	0.219	839	1923	2646	768	2023	2666	674	2041	2647
tide	0.259	986	1349	3024	925	1887	2793	878	2078	2857
tide	0.225	1006	1542	2970	976	1572	3014	908	1897	2981
tide	0.235	1014	1667	2699	962	1796	2731	865	1945	2811
tie-er	0.434	631	2156	2711	567	2085	2649	630	1854	2395
tie-er	0.324	674	2074	2720	658	2028	2553	627	1937	2368
tie-er	0.324	757	2026	2473	652	2130	2529	568	2132	2571
tie-er	0.223	933	1607	2848	912	1777	2779	826	1968	2877
tie-er	0.203	901	1858	2931	750	1987	2862	676	2077	2719
tie-er	0.228	884	1797	2549	746	2032	2482	668	2107	2531
tight	0.110	755	2150	2744	610	2298	2870	519	2439	2964
tight	0.132	574	2422	2972	504	2559	3020	448	2627	3057
tight	0.129	740	2092	2952	673	2124	2797	571	2382	2979
tire	0.269	702	2127	2721	595	2158	2677	618	2100	2253
tire	0.263	558	2272	2774	567	2171	2688	584	2125	2725
tire	0.301	543	2582	2715	547	2295	2731	587	2104	2563
tire	0.185	908	1962	2683	812	2031	2724	713	2098	2714
tire	0.184	697	2274	2724	586	2351	2780	557	2319	2720
tire	0.167	695	2344	2699	591	2351	2811	548	2535	2695
white	0.140	728	2009	2882	599	2262	2929	534	2482	3060
white	0.181	765	1959	2961	671	2205	2962	537	2387	3011
white	0.155	815	1782	2778	722	2049	2900	669	2213	3103
whyer	0.241	850	1123	2734	974	1361	2661	840	1951	2587
whyer	0.243	889	1656	2767	786	1795	2616	737	1990	2722
whyer	0.260	876	1177	2651	863	1774	2606	761	2018	2621
wide	0.298	1007	1063	2756	974	1193	2644	911	1419	2652
wide	0.288	996	1144	2762	990	1267	2774	929	1850	2782
wide	0.280	980	1533	2758	977	1682	2786	916	1871	2878
wire	0.189	882	1555	2934	884	1678	2821	824	1916	2743
wire	0.218	876	1812	2951	745	1949	2802	655	2233	2983
wire	0.225	837	1768	2588	704	1918	2621	667	2039	2638

Speaker 7		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
bide	0.292	877	2044	2937	646	2307	2933	556	2301	3058
bide	0.275	881	2008	2834	742	2214	2918	630	2284	3067
bide	0.280	868	1986	2692	701	2153	2945	572	2321	2990
bite	0.144	475	2448	2959	412	2639	2983	370	2712	2987
bite	0.176	428	2688	3065	364	2735	3052	390	2793	3036
bite	0.188	489	2616	3008	429	2656	3055	377	2611	3014

Speaker 7		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
fide	0.306	814	2156	2958	648	2365	3000	535	2464	3122
fide	0.310	817	2088	2795	648	2351	2973	509	2389	3058
fide	0.284	786	2173	2800	628	2337	2981	534	2346	3062
fie-er	0.424	575	1693	2025	511	1646	1929	551	1142	1845
fie-er	0.438	618	1976	2473	621	1803	2165	592	1725	2046
fie-er	0.456	583	1658	2000	540	1464	2001	567	1659	2027
fie-er	0.257	747	2025	2628	686	2073	2603	613	1995	2611
fie-er	0.305	687	2181	2785	586	2258	2708	586	2185	2706
fie-er	0.262	760	2139	2769	689	2215	2722	739	2204	2693
fight	0.166	445	2634	3034	377	2678	2990	411	2632	3061
fight	0.153	490	2580	2993	427	2647	2988	417	2549	2903
fight	0.173	456	2693	3042	401	2748	3033	394	2723	3054
fire	0.237	701	2161	2309	653	1829	2230	636	1756	2238
fire	0.309	590	1586	2026	575	1629	2009	510	1246	2060
fire	0.286	605	1896	2299	570	1694	1969	538	1603	1912
fire	0.228	706	2159	2389	655	1721	2211	640	1779	2229
fire	0.220	608	2012	2375	588	1979	2228	599	1929	2146
fire	0.193	636	2151	2593	593	2095	2557	611	1993	2472
height	0.119	513	2484	3015	483	2554	3050	451	2635	3104
height	0.140	432	2679	3017	541	2622	2991	413	2612	3026
height	0.136	482	2566	3072	424	2627	3023	383	2670	3051
hide	0.284	781	2113	3029	681	2259	3024	549	2338	2955
hide	0.234	796	2111	2875	647	2325	2768	510	2421	3150
hide	0.261	745	2209	3100	576	2414	3119	525	2515	3138
higher	0.380	634	1909	2200	582	1481	1996	554	1759	1972
higher	0.340	641	1965	2403	627	1805	2174	620	1767	2127
higher	0.349	573	1923	2422	640	1769	2195	579	1606	2092
higher	0.260	684	2136	2795	659	2100	2759	603	2026	2491
higher	0.256	559	2010	2723	574	2114	2674	638	1973	2416
higher	0.243	571	2358	2882	543	2318	2804	551	2079	2689
hire	0.312	665	1982	2362	640	1712	2090	624	1678	2001
hire	0.337	615	1883	2257	621	1734	2006	624	1811	2104
hire	0.254	627	1884	2307	616	1930	2075	532	1589	1922
hire	0.236	633	2169	2641	608	2083	2536	662	1965	2345
hire	0.226	655	2209	2821	594	2215	2755	605	2089	2499
hire	0.218	592	1928	2615	625	1984	2502	629	1884	2315
liar	0.391	626	2041	2412	565	1704	2097	468	1590	1959
liar	0.414	639	2099	2551	606	1798	2193	589	1673	2007
liar	0.335	628	2077	2661	646	1997	2390	638	1778	2201
liar	0.276	720	2105	2955	680	2206	2805	619	2115	2661
liar	0.290	828	2020	2944	707	2255	2931	629	2237	2873
liar	0.274	707	2182	2862	649	2162	2773	640	2086	2617
lied	0.273	802	2030	3166	659	2310	3240	596	2410	3087

Speaker 7		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
lied	0.298	846	2152	3008	633	2320	3016	512	2433	3139
lied	0.288	727	2191	3052	613	2401	3176	510	2321	3148
light	0.183	479	2551	3017	394	2596	3028	415	2553	3002
light	0.168	478	2464	3067	431	2553	3037	375	2616	3035
light	0.178	497	2474	3110	441	2590	3099	416	2628	3082
lyre	0.340	655	1768	2237	580	1679	2035	528	1641	1973
lyre	0.343	636	2135	2545	633	1862	2304	618	1815	2171
lyre	0.341	633	717	2271	521	1169	2148	530	2023	3684
lyre	0.214	858	1816	2689	793	1910	2577	731	1923	2516
lyre	0.257	732	2061	2840	653	2120	2774	637	2135	2558
lyre	0.271	778	976	2572	688	1212	2592	641	696	2218
mide	0.242	740	2136	3018	610	2397	3040	451	2461	3064
mide	0.280	808	2171	2973	643	2260	3023	542	2404	3033
mide	0.282	783	2113	2994	636	2344	2958	519	2375	3088
might	0.180	460	2601	3033	395	2674	3028	387	2717	2988
might	0.144	610	2424	3061	522	2533	3065	494	2631	3060
might	0.178	531	2664	3146	463	2705	3121	422	2702	3119
mire	0.353	606	1154	2411	639	833	2095	498	1157	2040
mire	0.278	623	1925	2365	614	1726	2159	599	1633	2028
mire	0.354	584	1742	2086	581	1756	1958	477	1692	2143
mire	0.254	865	1978	2781	737	2146	2732	660	1620	2490
mire	0.272	620	1899	2287	623	1741	2170	601	1578	2026
mire	0.232	631	2146	2662	568	2161	2801	575	2041	2524
myer	0.375	656	1349	2338	516	1220	2117	411	1955	2480
myer	0.336	693	1921	2567	651	1808	2217	634	1780	2135
myer	0.298	606	2001	2491	608	1802	2205	585	1789	1974
myer	0.282	751	2214	2602	707	2092	2656	687	1121	2441
myer	0.265	786	2281	2572	711	1578	2577	686	1918	2360
myer	0.266	628	2078	2663	618	1962	2484	609	1796	2186
shide	0.284	831	2050	2863	661	2210	2931	564	2376	3019
shide	0.284	818	2126	2843	673	2310	2805	518	2381	2993
shide	0.288	717	2178	3085	635	2232	3056	533	2299	3171
shire	0.384	586	1981	2234	579	1829	2191	473	1437	2046
shire	0.360	605	1731	2159	576	1637	2037	589	1534	1974
shire	0.285	621	2019	2665	613	1910	2426	598	1788	2308
shire	0.260	782	1989	2847	704	2178	2595	592	1419	2488
shire	0.236	802	1975	2633	698	2067	2595	650	2023	2506
shire	0.245	657	2063	2713	622	2023	2684	601	1943	2467
shite	0.151	475	2484	2949	432	2547	2987	441	2594	3007
shite	0.159	593	2324	3032	501	2472	2991	469	2536	3054
shite	0.127	547	2364	3037	483	2517	3026	459	2565	3033
shyer	0.368	567	1179	2315	552	1089	1993	523	1105	1873
shyer	0.335	622	2364	2510	572	1952	2355	603	1785	2136

Speaker 7		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
shyer	0.346	634	2294	2523	602	1717	2117	563	1796	2251
shyer	0.252	807	1931	2852	678	2158	2610	616	1620	2589
shyer	0.247	832	1983	2703	715	2082	2613	618	1495	2424
shyer	0.270	684	2303	2784	664	2307	2641	634	2208	2422
side	0.301	950	1921	2797	751	2191	2926	625	2411	3058
side	0.274	814	2055	2790	684	2228	2880	549	2365	3061
side	0.293	848	1975	2779	675	2233	2912	524	2365	2981
sigher	0.413	577	1426	1939	612	1550	2763	473	1950	1988
sigher	0.379	545	2043	2410	607	1847	2330	586	1663	2016
sigher	0.421	592	2167	2298	548	1154	2295	376	1896	2417
sigher	0.257	787	1999	2202	712	1963	2467	666	1998	2402
sigher	0.283	732	1986	2712	649	2118	2685	585	2065	2663
sigher	0.306	694	2191	2782	629	2079	2608	594	2234	2447
sight	0.171	407	2591	2983	385	2652	3028	387	2631	2994
sight	0.191	411	2540	3010	382	2582	3031	390	2581	3033
sight	0.132	506	2547	3031	437	2608	3017	379	2601	2988
sire	0.345	658	1289	2012	569	1237	2089	522	1700	2030
sire	0.349	672	2003	2480	713	1925	2378	646	1842	2268
sire	0.313	606	1788	2161	597	1687	2107	553	1551	2102
sire	0.216	938	1885	2665	866	1885	2515	776	1897	2436
sire	0.245	860	1894	2743	819	2002	2652	736	2041	2591
sire	0.219	580	2054	2591	584	2000	2495	600	1853	2282
tide	0.259	734	2176	2863	619	2386	2978	509	2447	3077
tide	0.225	763	2123	3016	648	2301	3018	511	2362	3034
tide	0.235	770	2115	2869	639	2303	2962	534	2328	3029
tie-er	0.434	532	1149	1974	486	1303	1831	533	1071	1766
tie-er	0.324	541	1580	2097	524	1718	2310	412	1847	2285
tie-er	0.324	594	1941	2352	626	1804	2175	612	1773	2141
tie-er	0.223	696	2178	3076	621	2159	2716	571	2177	2707
tie-er	0.203	676	2048	2608	653	2027	2527	642	1957	2483
tie-er	0.228	606	2122	2465	558	2126	2520	581	1960	2370
tight	0.110	482	2537	2978	477	2576	2973	452	2657	2920
tight	0.132	442	2722	3095	446	2715	3090	431	2131	2836
tight	0.129	515	2480	3021	454	2576	3011	430	2601	3026
tire	0.269	638	1907	2168	615	1383	1959	578	1530	1852
tire	0.263	593	2011	2175	627	1928	2038	592	1852	2099
tire	0.301	628	1910	2359	588	1541	2107	531	1440	1863
tire	0.185	678	2136	2727	617	2160	2637	573	2123	2694
tire	0.184	560	2214	2674	567	2140	2569	585	2129	2729
tire	0.167	539	2547	2689	544	2331	2730	553	2179	2716
white	0.140	505	2528	3019	451	2600	2992	384	2638	3001
white	0.181	466	2539	3003	389	2630	3022	387	2647	3040
white	0.155	557	2451	3040	464	2495	3029	448	2579	3046

Speaker 7		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
whyer	0.241	753	2098	2630	660	2172	2612	627	2246	2487
whyer	0.243	698	2222	2623	665	2159	2503	642	1986	2189
whyer	0.260	673	2281	2741	629	2149	2350	606	1963	2152
wide	0.298	803	2079	2669	654	2324	2914	525	2389	3047
wide	0.288	766	2154	2888	661	2277	2979	551	2344	3122
wide	0.280	782	2051	2932	639	2205	2878	506	2300	2839
wire	0.189	711	2140	2682	676	2173	2736	625	2087	2613
wire	0.218	614	2352	2787	547	2120	2418	572	1928	2504
wire	0.225	604	2058	2571	600	2025	2490	612	1959	2342

Speaker 8		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
bide	0.322	860	1266	2475	870	1274	2588	891	1255	2538
bide	0.294	886	1386	2394	936	1308	2482	923	1295	2515
bide	0.354	930	1315	2506	959	1233	2542	907	1242	2522
bite	0.183	777	1558	2542	739	1735	2670	649	1888	2690
bite	0.172	815	1486	2422	856	1600	2477	812	1756	2595
bite	0.174	798	1551	2606	781	1655	2687	729	1813	2720
fide	0.335	1093	1187	2502	1057	1180	2506	978	1286	2507
fide	0.308	945	1326	2422	916	1315	2494	949	1340	2531
fide	0.308	850	1275	2469	890	1317	2535	885	1356	2546
fie-er	0.373	1130	1174	2641	952	1485	2646	865	1863	2697
fie-er	0.403	1069	1297	2504	1022	1420	2589	883	1739	2552
fie-er	0.441	940	1207	2592	913	1295	2513	823	1627	2558
fie-er	0.192	983	1163	2561	1132	1186	2642	1008	1338	2705
fie-er	0.208	861	1347	2452	1054	1322	2536	1032	1369	2553
fie-er	0.227	838	1222	2520	940	1210	2591	942	1238	2575
fight	0.146	803	1429	2334	825	1588	2379	804	1732	2479
fight	0.170	783	1521	2359	774	1612	2450	737	1795	2540
fight	0.150	726	1380	2322	766	1516	2393	763	1708	2533
fire	0.396	1049	1140	2506	1092	1252	2544	964	1582	2480
fire	0.387	820	1315	2444	953	1336	2438	831	1634	2421
fire	0.376	1035	1231	2454	1102	1290	2480	926	1605	2522
fire	0.219	917	1195	2459	1086	1131	2505	1119	1200	2543
fire	0.223	806	1269	2341	838	1294	2420	922	1297	2446
fire	0.220	863	1284	2424	1068	1257	2442	1090	1276	2470
height	0.152	805	1941	2581	737	2101	2672	613	2283	2787
height	0.142	787	1751	2392	745	1905	2503	654	2049	2589
height	0.161	778	1776	2562	765	1923	2591	671	2043	2675
hide	0.297	975	1294	2494	977	1306	2536	962	1438	2454
hide	0.300	946	1283	2425	945	1273	2443	925	1313	2386
hide	0.297	991	1364	2379	983	1378	2400	971	1391	2400
higher	0.377	952	1313	2452	925	1520	2299	812	1898	2435

Speaker 8		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
higher	0.385	1004	1338	2495	995	1510	2441	763	1808	2516
higher	0.394	993	1326	2498	937	1592	2425	780	1915	2456
higher	0.211	866	1302	2444	955	1315	2453	948	1416	2349
higher	0.191	993	1323	2459	1007	1336	2499	1017	1344	2505
higher	0.185	941	1307	2503	991	1322	2496	1005	1401	2458
hire	0.389	1099	1241	2440	1012	1499	2353	785	1784	2369
hire	0.399	911	1282	2438	937	1442	2406	812	1774	2411
hire	0.370	948	1255	2484	867	1451	2412	821	1725	2521
hire	0.184	1022	1292	2421	1108	1240	2440	1078	1361	2421
hire	0.199	818	1319	2471	902	1287	2440	969	1308	2419
hire	0.194	910	1276	2449	938	1258	2481	917	1348	2472
liar	0.462	852	1193	2819	927	1313	2775	889	1658	2660
liar	0.400	958	1251	2600	962	1367	2502	864	1655	2461
liar	0.437	841	1283	2620	872	1324	2494	851	1574	2453
liar	0.235	779	1193	2816	871	1188	2831	901	1238	2810
liar	0.215	968	1233	2629	983	1225	2580	961	1321	2526
liar	0.237	782	1281	2645	846	1283	2607	864	1299	2538
lied	0.344	846	1181	2749	904	1186	2705	935	1264	2717
lied	0.317	818	1228	2734	829	1303	2675	858	1325	2618
lied	0.368	855	1259	2835	887	1295	2838	899	1326	2780
light	0.169	799	1462	2854	804	1642	2874	736	1803	2896
light	0.162	750	1526	2757	806	1670	2772	774	1785	2801
light	0.183	747	1520	2775	752	1673	2778	682	1839	2836
lyre	0.350	922	1654	2744	782	2006	2789	655	2244	2937
lyre	0.415	885	1293	2695	905	1356	2589	870	1644	2492
lyre	0.421	877	1244	2774	951	1310	2691	905	1635	2586
lyre	0.135	993	1452	2743	954	1602	2755	905	1711	2739
lyre	0.220	818	1340	2702	884	1292	2690	911	1300	2617
lyre	0.235	845	1239	2792	891	1248	2776	904	1279	2731
mide	0.352	950	1298	2818	1036	1268	2790	1007	1273	2747
mide	0.306	1043	1397	2725	1114	1309	2784	1020	1289	2726
mide	0.303	987	1246	2513	989	1304	2758	1001	1298	2667
might	0.169	917	1464	2599	867	1708	2723	766	1980	2767
might	0.175	839	1580	2775	839	1735	2799	747	1991	2823
might	0.175	800	1529	2451	803	1649	2635	787	1783	2741
mire	0.396	1017	1219	2562	966	1392	2559	875	1767	2552
mire	0.423	892	1311	2717	899	1429	2707	820	1850	2604
mire	0.375	920	1325	2594	954	1432	2677	875	1714	2680
mire	0.216	897	1225	2544	1001	1234	2559	994	1307	2564
mire	0.219	891	1225	2594	887	1299	2710	909	1337	2759
mire	0.198	897	1292	2525	921	1327	2596	963	1362	2649
myer	0.400	913	1330	2804	919	1388	2715	914	1614	2638
myer	0.399	948	1323	2746	890	1400	2771	853	1683	2630

Speaker 8		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
myer	0.409	934	1263	2399	915	1305	2409	826	1669	2523
myer	0.218	884	1313	2819	914	1336	2800	913	1353	2792
myer	0.215	885	1329	2682	937	1333	2749	891	1370	2791
myer	0.216	873	1321	2440	934	1263	2400	1007	1228	2406
shide	0.313	754	1707	2506	884	1531	2554	899	1385	2616
shide	0.337	896	1783	3082	1072	1333	2393	1007	1301	2445
shide	0.319	763	1679	2543	867	1485	2425	836	1443	2426
shire	0.371	867	1555	2416	932	1395	2356	881	1580	2434
shire	0.459	859	1476	2285	911	1422	2333	822	1682	2352
shire	0.393	811	1548	2416	858	1476	2377	820	1559	2414
shire	0.226	731	1655	2453	919	1505	2379	953	1401	2381
shire	0.219	734	1611	2315	858	1476	2285	963	1400	2296
shire	0.228	758	1672	2488	848	1554	2418	852	1483	2358
shite	0.204	711	1663	2448	790	1723	2467	745	1860	2550
shite	0.162	679	1942	2566	721	1963	2593	698	2032	2596
shite	0.179	662	1789	2543	750	1865	2601	718	1935	2649
shyer	0.398	827	1538	2435	893	1484	2478	823	1666	2522
shyer	0.460	858	1600	2373	956	1376	2388	881	1573	2444
shyer	0.478	829	1620	2528	862	1512	2455	813	1716	2486
shyer	0.223	725	1657	2563	838	1527	2434	901	1472	2479
shyer	0.247	700	1748	2588	882	1545	2333	958	1409	2353
shyer	0.229	682	1704	2609	827	1631	2528	881	1507	2466
side	0.300	799	1527	2574	891	1429	2623	904	1360	2646
side	0.346	938	1433	2499	988	1248	2482	919	1238	2483
side	0.325	839	1584	2505	955	1388	2489	925	1346	2509
sigher	0.410	847	1464	2496	871	1425	2552	811	1714	2576
sigher	0.454	881	1478	2430	901	1420	2424	815	1656	2466
sigher	0.424	888	1539	2610	931	1421	2672	867	1652	2662
sigher	0.231	745	1541	2498	862	1449	2500	891	1408	2533
sigher	0.222	777	1581	2491	886	1471	2429	939	1424	2426
sigher	0.243	765	1618	2657	915	1503	2589	944	1428	2642
sight	0.162	749	1634	2531	831	1706	2532	818	1818	2625
sight	0.159	707	1635	2440	753	1736	2492	729	1884	2584
sight	0.161	647	1674	2485	691	1770	2506	676	1914	2602
sire	0.408	978	1442	2617	953	1377	2610	884	1678	2601
sire	0.406	974	1451	2493	1028	1256	2476	930	1463	2462
sire	0.420	831	1404	2507	858	1418	2496	772	1679	2528
sire	0.220	821	1564	2645	984	1433	2617	1004	1359	2631
sire	0.244	830	1593	2537	1067	1318	2449	957	1295	2466
sire	0.218	766	1543	2522	830	1398	2508	849	1376	2489
tide	0.307	851	1328	2541	817	1334	2551	798	1360	2514
tide	0.289	1037	1225	2556	1004	1251	2544	985	1340	2537
tide	0.306	856	1355	2475	923	1329	2532	868	1326	2542

Speaker 8		Timepoint 1			Timepoint 2			Timepoint 3		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
tie-er	0.383	1055	1370	2597	932	1585	2639	803	1964	2656
tie-er	0.403	883	1319	2436	839	1542	2400	666	1908	2502
tie-er	0.422	983	1428	2472	904	1655	2486	706	2011	2606
tie-er	0.182	1034	1363	2637	1074	1369	2626	972	1381	2508
tie-er	0.193	869	1287	2418	881	1326	2434	896	1405	2394
tie-er	0.189	891	1384	2473	974	1419	2479	977	1499	2471
tight	0.123	739	1816	2597	698	1894	2641	637	2033	2647
tight	0.150	698	1764	2555	672	1890	2557	628	2002	2627
tight	0.136	716	1800	2528	687	1885	2641	638	2051	2731
tire	0.425	1029	1270	2556	1016	1440	2515	769	1814	2510
tire	0.377	918	1342	2417	983	1594	2442	782	1864	2464
tire	0.377	983	1296	2437	965	1557	2431	804	1907	2432
tire	0.206	975	1319	2523	1030	1270	2556	1049	1278	2544
tire	0.156	913	1314	2413	917	1346	2414	971	1400	2422
tire	0.180	976	1313	2438	979	1295	2438	1002	1372	2443
white	0.162	726	1206	2538	786	1464	2563	724	1677	2605
white	0.167	759	1450	2515	731	1624	2549	643	1809	2569
white	0.186	733	1374	2543	719	1596	2648	616	1868	2713
whyer	0.383	957	1205	2411	936	1369	2414	826	1649	2445
whyer	0.393	949	1349	2491	845	1626	2498	710	2002	2529
whyer	0.387	830	1292	2449	853	1520	2448	744	1814	2529
whyer	0.212	919	1184	2380	971	1259	2427	951	1338	2410
whyer	0.204	992	1105	2459	964	1277	2497	941	1339	2502
whyer	0.191	801	1167	2415	803	1268	2447	825	1340	2455
wide	0.290	892	1248	2505	854	1261	2501	955	1284	2497
wide	0.281	944	1176	2507	974	1258	2526	958	1403	2537
wide	0.258	941	1267	2425	1002	1277	2405	985	1315	2386
wire	0.308	1046	1402	2461	950	1619	2463	813	1845	2496
wire	0.329	960	1387	2401	855	1629	2384	731	1867	2498
wire	0.352	1091	1235	2118	934	1483	2244	781	1785	2389
wire	0.188	1031	1125	2398	1043	1330	2420	1040	1436	2468
wire	0.193	917	1167	2395	973	1236	2370	965	1368	2403
wire	0.177	1009	1193	2065	1073	1259	2117	1069	1334	2177

Speaker 8		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
bide	0.322	927	1344	2546	919	1600	2533	815	1871	2605
bide	0.294	934	1344	2480	880	1507	2448	808	1749	2493
bide	0.354	925	1310	2487	910	1495	2444	808	1762	2492
bite	0.183	518	2168	2719	467	2378	2745	469	2549	2949
bite	0.172	709	1901	2648	570	2103	2668	468	2292	2698
bite	0.174	598	2021	2751	470	2223	2762	457	2406	2726
fide	0.335	1005	1453	2510	903	1661	2453	837	1882	2488

Speaker 8		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
fide	0.308	949	1358	2479	909	1519	2458	814	1766	2507
fide	0.308	887	1402	2530	863	1573	2549	783	1761	2557
fie-er	0.373	647	2211	2852	482	2229	2728	556	1986	2376
fie-er	0.403	694	2080	2634	557	2135	2604	552	2020	2341
fie-er	0.441	596	2010	2658	466	2178	2666	513	1844	2299
fie-er	0.192	960	1511	2647	938	1651	2624	838	1893	2724
fie-er	0.208	996	1457	2566	930	1626	2559	843	1801	2549
fie-er	0.227	912	1313	2515	879	1471	2541	809	1671	2563
fight	0.146	735	1929	2593	613	2046	2624	516	2222	2708
fight	0.170	627	1986	2661	538	2163	2725	440	2305	2752
fight	0.150	712	1908	2624	615	2108	2704	492	2267	2739
fire	0.396	804	1936	2513	621	2072	2611	566	2029	2416
fire	0.387	660	1939	2561	569	2160	2604	542	2050	2444
fire	0.376	734	1859	2544	582	2011	2536	549	1971	2449
fire	0.219	1062	1318	2536	1000	1518	2496	901	1676	2483
fire	0.223	932	1413	2448	849	1571	2419	768	1754	2458
fire	0.220	1027	1378	2479	951	1570	2511	828	1742	2534
height	0.152	555	2381	2805	537	2576	2988	492	2607	2953
height	0.142	545	2213	2678	475	2395	2827	478	2523	2789
height	0.161	573	2186	2768	460	2295	2794	451	2380	2794
hide	0.297	884	1648	2447	786	1823	2469	665	2007	2502
hide	0.300	915	1442	2347	854	1685	2431	762	1905	2592
hide	0.297	958	1477	2385	896	1602	2331	806	1839	2491
higher	0.377	601	2130	2719	554	2124	2611	559	1860	2139
higher	0.385	634	2097	2630	489	2123	2526	511	1840	2205
higher	0.394	527	2198	2594	499	2098	2487	532	1803	2169
higher	0.211	909	1571	2278	845	1770	2373	773	2001	2548
higher	0.191	1001	1499	2441	889	1617	2465	773	1801	2517
higher	0.185	950	1566	2409	902	1693	2451	825	1876	2432
hire	0.389	588	2081	2501	538	2055	2446	558	1834	2078
hire	0.399	666	2026	2571	571	2032	2529	547	1846	2273
hire	0.370	710	1941	2699	629	2140	2650	586	1962	2360
hire	0.184	1018	1490	2361	895	1623	2353	794	1760	2366
hire	0.199	938	1432	2412	891	1611	2374	816	1757	2404
hire	0.194	868	1491	2415	850	1612	2448	792	1753	2564
liar	0.462	707	2002	2669	575	2100	2572	554	1816	2249
liar	0.400	710	1918	2527	563	2041	2506	545	1948	2311
liar	0.437	649	1911	2500	531	2024	2550	518	1921	2278
liar	0.235	942	1327	2769	922	1499	2667	863	1717	2663
liar	0.215	960	1409	2496	906	1559	2472	812	1713	2466
liar	0.237	886	1343	2476	879	1476	2461	810	1677	2475
lied	0.344	994	1335	2708	965	1577	2606	820	1812	2555
lied	0.317	865	1422	2588	825	1646	2627	743	1819	2609

Speaker 8		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
lied	0.368	914	1388	2676	906	1608	2580	789	1861	2559
light	0.169	588	2064	2888	490	2253	2853	504	2431	2824
light	0.162	689	1967	2846	593	2203	2849	469	2362	2826
light	0.183	560	2079	2817	473	2326	2778	417	2515	2673
lyre	0.350	612	2243	2750	582	1960	2324	602	1738	2107
lyre	0.415	754	1909	2551	612	2000	2510	578	1852	2291
lyre	0.421	757	1937	2551	642	2091	2546	584	1922	2273
lyre	0.135	842	1872	2768	791	1974	2780	724	2131	2851
lyre	0.220	906	1376	2577	906	1519	2537	854	1688	2506
lyre	0.235	963	1384	2654	930	1567	2598	865	1735	2562
mide	0.352	963	1398	2676	916	1636	2686	763	1991	2729
mide	0.306	953	1413	2614	898	1648	2520	768	1885	2555
mide	0.303	880	1423	2516	852	1636	2456	756	1829	2512
might	0.169	635	2171	2750	535	2375	2818	456	2486	2790
might	0.175	623	2228	2812	485	2412	2834	455	2587	2841
might	0.175	731	1950	2768	595	2182	2758	526	2358	2775
mire	0.396	699	2085	2629	591	2127	2614	574	1928	2305
mire	0.423	600	2062	2637	522	2085	2447	540	1765	2009
mire	0.375	726	2029	2642	602	2114	2522	590	1931	2328
mire	0.216	954	1420	2541	911	1625	2573	836	1858	2558
mire	0.219	896	1421	2706	874	1591	2623	821	1840	2598
mire	0.198	958	1450	2685	919	1604	2717	858	1766	2668
myer	0.400	763	1985	2600	587	2221	2669	581	2076	2409
myer	0.399	686	2056	2686	563	2233	2746	556	2057	2400
myer	0.409	643	2105	2577	560	2136	2565	566	1889	2255
myer	0.218	924	1401	2697	932	1512	2626	896	1698	2620
myer	0.215	888	1423	2754	865	1583	2662	826	1753	2611
myer	0.216	931	1307	2422	877	1504	2464	808	1706	2509
shide	0.313	865	1313	2625	839	1378	2564	809	1631	2545
shide	0.337	923	1354	2492	867	1503	2461	797	1694	2455
shide	0.319	849	1453	2482	818	1562	2460	753	1745	2551
shire	0.371	772	1811	2505	622	1996	2564	551	2072	2490
shire	0.459	637	2015	2559	523	2087	2596	553	1871	2208
shire	0.393	741	1762	2471	576	2037	2621	532	1998	2471
shire	0.226	927	1449	2387	880	1582	2435	806	1711	2489
shire	0.219	904	1414	2326	879	1505	2318	837	1650	2344
shire	0.228	859	1493	2448	824	1552	2417	791	1686	2463
shite	0.204	626	1982	2692	497	2159	2746	463	2354	2817
shite	0.162	622	2176	2644	501	2276	2700	466	2357	2775
shite	0.179	641	2094	2692	536	2246	2745	492	2390	2744
shyer	0.398	696	1933	2614	493	2132	2720	525	2055	2479
shyer	0.460	694	1916	2569	523	2122	2684	509	1998	2361
shyer	0.478	618	2093	2672	521	2124	2674	515	1850	2258

Speaker 8		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
shyer	0.223	897	1507	2516	847	1631	2526	790	1771	2546
shyer	0.247	939	1383	2395	897	1469	2423	845	1668	2469
shyer	0.229	867	1502	2442	831	1579	2453	819	1683	2474
side	0.300	891	1397	2597	872	1527	2586	833	1682	2551
side	0.346	950	1335	2466	900	1535	2438	781	1820	2456
side	0.325	916	1321	2553	900	1432	2486	840	1668	2530
sigher	0.410	639	2085	2721	467	2214	2827	526	2029	2471
sigher	0.454	626	2010	2477	531	2089	2533	509	1801	2199
sigher	0.424	739	1903	2645	561	2125	2708	526	2100	2488
sigher	0.231	885	1474	2557	838	1639	2587	761	1835	2604
sigher	0.222	901	1420	2424	857	1501	2431	817	1649	2467
sigher	0.243	894	1460	2653	873	1614	2647	819	1775	2652
sight	0.162	760	1936	2786	608	2127	2788	487	2321	2719
sight	0.159	665	2051	2674	558	2207	2759	465	2346	2800
sight	0.161	600	2091	2661	551	2218	2672	474	2339	2739
sire	0.408	713	1973	2639	531	2119	2594	515	1881	2322
sire	0.406	799	1803	2534	622	2062	2635	562	2072	2528
sire	0.420	663	2005	2568	541	2125	2562	551	1921	2345
sire	0.220	958	1395	2590	932	1560	2580	855	1736	2597
sire	0.244	986	1335	2506	925	1475	2455	840	1677	2506
sire	0.218	853	1433	2499	811	1576	2485	760	1723	2527
tide	0.307	860	1500	2522	844	1726	2565	756	1964	2684
tide	0.289	924	1559	2530	830	1827	2609	697	2059	2733
tide	0.306	926	1409	2453	882	1651	2401	773	1827	2461
tie-er	0.383	517	2205	2775	480	2119	2513	532	1767	2152
tie-er	0.403	561	2159	2734	529	2143	2609	539	1762	2093
tie-er	0.422	489	2203	2712	505	2060	2454	515	1742	2016
tie-er	0.182	956	1534	2617	874	1682	2682	819	1891	2608
tie-er	0.193	834	1549	2401	743	1715	2457	668	1904	2500
tie-er	0.189	932	1610	2482	838	1768	2496	760	1919	2546
tight	0.123	517	2169	2693	475	2350	2752	470	2472	2894
tight	0.150	557	2170	2677	457	2269	2665	440	2371	2705
tight	0.136	534	2178	2776	472	2256	2687	471	2384	2795
tire	0.425	606	2067	2583	543	2080	2438	547	1783	2119
tire	0.377	598	2080	2567	561	1983	2376	560	1702	2052
tire	0.377	614	2058	2549	564	2021	2475	597	1865	2184
tire	0.206	1018	1424	2518	902	1589	2477	781	1794	2502
tire	0.156	998	1546	2431	926	1644	2412	859	1764	2453
tire	0.180	972	1525	2434	891	1684	2418	819	1863	2422
white	0.162	623	1922	2625	534	2199	2647	432	2390	2767
white	0.167	566	2012	2571	453	2179	2618	434	2411	2705
white	0.186	550	2143	2670	444	2370	2747	450	2443	2787
whyer	0.383	613	1983	2579	544	2082	2601	533	1940	2398

Speaker 8		Timepoint 4			Timepoint 5			Timepoint 6		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
whyer	0.393	493	2199	2580	516	2097	2459	521	1774	2123
whyer	0.387	548	2083	2641	523	1932	2378	507	1821	2220
whyer	0.212	918	1475	2399	840	1622	2423	758	1825	2505
whyer	0.204	932	1447	2461	850	1610	2489	806	1783	2556
whyer	0.191	856	1430	2439	838	1568	2452	779	1731	2491
wide	0.290	977	1451	2465	852	1684	2474	746	1929	2578
wide	0.281	918	1572	2478	824	1774	2459	748	1954	2464
wide	0.258	943	1431	2377	895	1610	2395	799	1777	2479
wire	0.308	679	1999	2546	579	1976	2503	531	1885	2239
wire	0.329	573	1964	2549	496	1972	2515	485	1904	2212
wire	0.352	618	2054	2580	536	2057	2518	544	1884	2218
wire	0.188	964	1605	2464	887	1711	2459	810	1853	2496
wire	0.193	916	1533	2380	844	1645	2407	794	1805	2436
wire	0.177	938	1468	2243	879	1650	2302	787	1769	2381

Speaker 8		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
bide	0.322	690	2087	2766	554	2210	2891	495	2169	2901
bide	0.294	681	1977	2616	578	2118	2700	480	2214	2775
bide	0.354	728	2002	2595	606	2128	2649	465	2253	2814
bite	0.183	439	2596	2961	378	2618	2978	349	2626	2664
bite	0.172	427	2416	2730	437	2567	2853	421	2597	2967
bite	0.174	455	2595	2845	431	2609	2866	380	2681	2943
fide	0.335	706	2079	2607	598	2202	2767	512	2240	2799
fide	0.308	730	1989	2612	623	2089	2653	506	2162	2776
fide	0.308	688	1957	2623	575	2182	2658	473	2241	2805
fie-er	0.373	541	1711	1978	525	1580	1768	517	1565	1712
fie-er	0.403	549	1793	2039	562	1711	3172	522	1646	1799
fie-er	0.441	524	1667	2018	515	1648	1881	512	1668	1794
fie-er	0.192	777	2080	2679	585	2232	2864	507	2246	2829
fie-er	0.208	771	1962	2565	646	2097	2683	577	2114	2641
fie-er	0.227	686	1898	2588	568	2055	2672	471	2132	2677
fight	0.146	496	2372	2802	470	2514	2881	424	2623	2868
fight	0.170	409	2371	2669	405	2495	2873	390	2556	2986
fight	0.150	457	2383	2798	423	2531	2952	413	2564	2810
fire	0.396	613	1753	2049	596	1624	1891	538	1607	1648
fire	0.387	534	1817	2116	539	1699	1936	538	1667	1949
fire	0.376	539	1838	2137	550	1689	1884	507	1655	1824
fire	0.219	813	1892	2503	717	2076	2555	619	2073	2608
fire	0.223	660	1939	2561	598	2098	2579	562	2170	2591
fire	0.220	725	1878	2546	619	1951	2540	570	2013	2537
height	0.152	457	2684	3149	421	2752	3167	361	2669	3055
height	0.142	469	2607	2963	454	2637	2993	415	2634	3081

Speaker 8		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
height	0.161	445	2505	2824	427	2621	2905	382	2593	2925
hide	0.297	555	2091	2537	484	2198	2648	471	2214	2647
hide	0.300	665	2063	2672	597	2179	2768	508	2213	2798
hide	0.297	724	2102	2673	593	2262	2763	467	2274	2779
higher	0.377	573	1663	1820	556	1614	1694	542	1590	1666
higher	0.385	550	1723	1932	537	1652	1837	521	1630	1873
higher	0.394	539	1643	1938	528	1602	1922	530	1588	1805
higher	0.211	634	2096	2663	569	2151	2729	555	2129	2622
higher	0.191	699	1930	2538	643	2091	2627	542	2133	2627
higher	0.185	700	1949	2505	572	2118	2506	495	2214	2695
hire	0.389	542	1660	1834	488	1578	1777	488	1677	1898
hire	0.399	546	1694	1965	535	1649	1845	522	1648	1852
hire	0.370	582	1754	2076	564	1693	1848	554	1654	1897
hire	0.184	721	1941	2467	624	2077	2562	548	2131	2538
hire	0.199	749	1885	2514	671	2019	2566	617	2023	2592
hire	0.194	734	1897	2639	680	2040	2719	633	2119	2685
liar	0.462	553	1670	2015	539	1628	1895	538	1636	1875
liar	0.400	578	1758	2012	621	1666	1672	608	1638	1655
liar	0.437	525	1687	1973	522	1627	1789	507	1668	1691
liar	0.235	775	1884	2658	669	2024	2677	593	2113	2629
liar	0.215	732	1866	2498	665	1990	2513	575	2051	2502
liar	0.237	704	1867	2497	577	1974	2561	535	2006	2553
lied	0.344	699	2104	2669	566	2240	2800	518	2254	2790
lied	0.317	590	2129	2628	537	2236	2699	452	2227	2725
lied	0.368	641	2156	2697	508	2333	2763	457	2363	2835
light	0.169	465	2580	2859	412	2791	2818	398	2705	2958
light	0.162	414	2500	2828	393	2585	3027	379	2606	3209
light	0.183	431	2642	2899	417	2652	3215	362	2654	3060
lyre	0.350	592	1666	1842	555	1656	1803	558	1565	1751
lyre	0.415	571	1688	2040	553	1672	2103	561	1709	1861
lyre	0.421	582	1697	1962	545	1648	1808	549	1669	1761
lyre	0.135	680	2200	2908	645	2247	2921	615	2255	2881
lyre	0.220	792	1855	2529	729	1949	2564	647	2006	2561
lyre	0.235	773	1902	2541	695	2049	2562	640	2090	2542
mide	0.352	613	2228	2796	509	2333	2819	476	2328	2807
mide	0.306	637	2078	2606	520	2141	2653	462	2226	2677
mide	0.303	652	2024	2582	553	2212	2623	508	2280	2625
might	0.169	469	2831	2857	497	2634	2901	480	2832	2944
might	0.175	439	2601	2977	424	2678	3111	388	2604	3197
might	0.175	447	2520	2800	400	2638	2976	385	2720	3050
mire	0.396	638	1755	1847	629	1674	1787	614	1681	1795
mire	0.423	507	1674	1778	486	1668	1767	475	1695	1884
mire	0.375	596	1718	1991	549	1620	1845	493	1607	1913

Speaker 8		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
mire	0.216	749	2059	2580	649	2161	2680	598	2139	2640
mire	0.219	715	1938	2638	598	2067	2636	535	2124	2563
mire	0.198	790	1921	2635	690	2077	2653	625	2129	2597
myer	0.400	632	1742	2001	667	1658	1714	614	1637	1697
myer	0.399	573	1826	1993	559	1653	1791	516	1655	1708
myer	0.409	536	1724	1975	533	1676	1881	501	1719	1852
myer	0.218	805	1876	2597	690	2122	2651	602	2208	2688
myer	0.215	736	1975	2660	623	2130	2714	575	2224	2729
myer	0.216	725	1964	2563	610	2144	2590	570	2142	2558
shide	0.313	715	1892	2620	567	2125	2679	524	2227	2725
shide	0.337	710	1969	2502	568	2141	2603	542	2274	2740
shide	0.319	653	2009	2668	561	2164	2724	473	2265	2796
shire	0.371	538	1880	2133	541	1672	1873	517	1692	1702
shire	0.459	568	1690	1930	560	1670	1832	457	1759	3066
shire	0.393	531	1856	2272	538	1683	1936	532	1632	1838
shire	0.226	732	1871	2509	638	1961	2560	583	2038	2566
shire	0.219	778	1804	2404	672	1968	2506	556	2089	2624
shire	0.228	728	1799	2488	625	1965	2595	554	2046	2629
shite	0.204	466	2556	2685	433	2635	2794	379	2606	2889
shite	0.162	473	2482	2922	455	2523	2825	430	2554	2908
shite	0.179	406	2490	2757	402	2565	2860	370	2621	2885
shyer	0.398	536	1786	2086	532	1681	1962	524	1680	1915
shyer	0.460	551	1796	1932	534	1697	1828	504	1679	1794
shyer	0.478	550	1686	1935	547	1623	1626	530	1632	1670
shyer	0.223	711	1912	2616	597	2067	2664	492	2132	2719
shyer	0.247	753	1859	2538	597	2027	2664	528	2120	2709
shyer	0.229	783	1855	2552	658	2058	2681	551	2131	2756
side	0.300	768	1944	2610	611	2125	2685	543	2243	2790
side	0.346	625	2039	2528	551	2097	2689	463	2215	2703
side	0.325	722	1927	2588	603	2063	2665	520	2187	2748
sigher	0.410	542	1761	2085	541	1692	1872	547	1647	1780
sigher	0.454	518	1629	1878	522	1607	1707	534	1654	1778
sigher	0.424	557	1794	2110	537	1645	1870	540	1628	1723
sigher	0.231	661	2054	2702	505	2217	2797	467	2209	2831
sigher	0.222	766	1835	2447	638	1990	2473	557	2012	2563
sigher	0.243	728	1918	2643	600	2023	2692	549	2144	2716
sight	0.162	485	2464	2871	453	2584	2919	425	2635	3124
sight	0.159	446	2448	2828	432	2516	3016	403	2556	2839
sight	0.161	418	2398	2719	393	2473	2836	400	2499	2889
sire	0.408	523	1758	1853	531	1730	1751	528	1689	2007
sire	0.406	549	1818	2178	537	1639	1938	525	1611	1818
sire	0.420	550	1670	1935	522	1667	1735	470	1664	1746
sire	0.220	794	1910	2639	647	2057	2661	565	2147	2605

Speaker 8		Timepoint 7			Timepoint 8			Timepoint 9		
Word	Dur (s)	F1	F2	F3	F1	F2	F3	F1	F2	F3
sire	0.244	758	1881	2574	638	2042	2604	592	2078	2575
sire	0.218	707	1882	2544	624	2030	2594	551	2104	2609
tide	0.307	644	2140	2793	572	2213	2817	481	2247	2835
tide	0.289	577	2227	2797	523	2309	2871	475	2293	2825
tide	0.306	694	2065	2606	587	2218	2694	518	2318	2782
tie-er	0.383	534	1599	1773	538	1597	1681	547	1604	1674
tie-er	0.403	551	1616	1801	571	1586	1775	530	1619	1733
tie-er	0.422	532	1636	1756	512	1609	1758	507	1678	1799
tie-er	0.182	740	2055	2674	562	2179	2695	494	2206	2757
tie-er	0.193	611	2052	2648	564	2147	2730	541	2202	2770
tie-er	0.189	648	2044	2630	546	2169	2709	489	2208	2718
tight	0.123	465	2533	2877	450	2569	2885	415	2578	3058
tight	0.150	436	2477	2700	433	2540	2784	368	2598	3393
tight	0.136	478	2473	2853	455	2481	2917	398	2463	3032
tire	0.425	533	1680	1820	528	1604	1829	512	1617	1827
tire	0.377	557	1591	1853	522	1542	1758	484	1610	1771
tire	0.377	604	1694	2015	578	1668	1924	549	1745	1795
tire	0.206	685	1940	2555	621	2044	2576	547	2137	2594
tire	0.156	766	1892	2483	689	1982	2508	606	2067	2553
tire	0.180	739	1937	2478	631	2020	2541	585	2061	2545
white	0.162	391	2514	2894	370	2619	2942	367	2617	2949
white	0.167	435	2476	2760	402	2611	2625	375	2583	2920
white	0.186	453	2550	2829	430	2662	2853	378	2608	3016
whyer	0.383	566	1739	1980	540	1686	1901	529	1656	1940
whyer	0.393	517	1695	1837	534	1615	1775	599	1640	1728
whyer	0.387	503	1697	1971	498	1646	1882	492	1635	1889
whyer	0.212	612	1986	2580	554	2093	2644	544	2081	2588
whyer	0.204	720	1993	2529	574	2136	2620	493	2199	2581
whyer	0.191	700	1882	2550	575	2046	2607	538	2079	2628
wide	0.290	626	2100	2676	572	2203	2722	486	2225	2715
wide	0.281	617	2120	2627	494	2218	2738	461	2277	2793
wide	0.258	713	1951	2544	611	2122	2629	534	2267	2730
wire	0.308	510	1659	1952	483	1581	1868	466	1619	1812
wire	0.329	495	1745	2008	479	1651	1932	468	1726	1801
wire	0.352	556	1713	1934	554	1659	1872	540	1629	1732
wire	0.188	739	1948	2544	646	2016	2556	589	1983	2515
wire	0.193	660	1922	2556	592	1959	2556	527	1992	2551
wire	0.177	717	1941	2512	624	2049	2580	556	2087	2571