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Abstract
Adolescent peaks have been observed across a range of different types of language change (Labov 2001, Tagliamonte and D'Arcy 2009). However, while Labov (2001) finds that peaks are only present in the gender leading the change in phonetic variables, Tagliamonte and D'Arcy (2009) find no gender asymmetry in morphosyntactic and discourse-pragmatic changes. This paper contributes to this issue through an apparent time investigation of TH-fronting in southeast England. Crucially, this is a male-led change, thus presents an ideal opportunity to further investigate the relationship between gender and incrementation. While the results provide further support for the claim that an adolescent peak is a "general requirement of change in progress" (Labov 2001:455), the details of this analysis contribute further understanding of how this process interacts with a form's embedding within the wider sociolinguistic system. The discussion situates these results within broader universals of language change and how incrementation relates to another developmental sociolinguistic process: the acquisition of variation.

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Ladies First? Adolescent Peaks in a Male-Led Change

Sophie Holmes-Elliott

1 Introduction

This paper investigates the impact of gender on the incrementation of language change through an examination of TH-fronting in Hastings, southeast England. Research into incrementation to date has shown that children show lower rates of innovative forms than adolescents. As a consequence, when children are added to the view of language change in apparent time it creates what Labov (2001) labels an ‘adolescent peak.’ Although there is already strong empirical support for the model, there is a discrepancy with regards to how gender impacts on the process. While Labov (2001) observes peaks only across the trajectory of the gender leading the change, Tagliamonte and D’Arcy (2009) find adolescent peaks for both genders. This begs an important question: do both males and females participate equally in incrementation, or is it only the gender leading the change? Previous conclusions are limited by the fact that the evidence comes from female-led changes. The present study contributes to this question through analysis of change across an age-stratified sample of speakers which extends to include the age groups necessary to test this hypothesis: a child (8-10 years) and an adolescent (16-18 years) cohort. Moreover, through an investigation of TH-fronting, a male-led change, this paper presents original perspective on the relationship between gender and incrementation. This provides an important piece of the puzzle and further tests the universality of this model.

2 Background

2.1 Language Change, Incrementation and Adolescent Peaks

When viewed through apparent time, the progression of language change appears as a steady, monotonic increase in the use of an innovative form (Labov 2001:452). This advancement of change is achieved through every generation moving the change on beyond the level of their predecessors. This process is known as incrementation, where children, as they mature, move the linguistic system on a stage. They surpass the models of their parents and slightly older peers until they become the leaders of language change. In Labov’s words, “successive cohorts and generations of children advance the change beyond the level of their caretakers and role models, and in the same direction over many generations” (2007:346).

However, children do not start out as the leaders of linguistic change. Research has shown that initially, children model the linguistic systems of their caregivers before entering formal education, where they orient away from their parents and align with their peers (Kerswill and Williams 2000, Nardy, Chevrot and Barbu 2014). Eventually, as the children approach adolescence, they surpass the levels of their slightly older peers and move into the leading position on the vanguard of change. Essentially, incrementation involves a process of sociolinguistic maturation during which young speakers’ dialects go through a period of development until they stabilize and their permanent adult systems are set. This process is more or less complete by the time they reach seventeen (Labov 2001:447, Tagliamonte and D’Arcy 2009:69). In short, during ongoing change, younger children lag behind the leading adolescents: “The frequency of incoming (i.e., innovative) forms is highest among adolescents; preadolescents are consistently found to use incoming forms less frequently, not more frequently, than their immediate elders, while postadolescents also use the same forms less frequently” (Tagliamonte & D’Arcy 2009:59). Thus when children are added to the view of language change in apparent time the lag creates what Labov (2001:454) terms an “adolescent peak.” Figure 1 demonstrates an idealized representation of an adolescent peak as it would appear in apparent time.
Figure 1: Idealized adolescent peak in apparent time (based on Tagliamonte 2012:49).

This model of incrementation and language change has been borne out through empirical study across a range of different types of language change. In Labov’s (2001:258) study of nine ongoing vocalic changes in Philadelphia, he observed a peak in each one; these findings are reproduced in Figure 2:

Figure 2: Apparent time view of nine ongoing sound changes in Philadelphia.

Figure 2 shows an adolescent peak in the trajectory of each of the changes demonstrated through the finding that the most extreme measures (in Hz) are located in the 13-16 year-old cohort while the preadolescent speakers show less extreme rates.

In addition to sound changes, adolescent peaks have also been observed “beyond phonology.” In their investigation of ongoing changes in Toronto English, Tagliamonte and D’Arcy (2009:82) found adolescent peaks across a range of morphosyntactic and discourse pragmatic changes; these results are replicated in Figure 3:

Figure 1: Apparent time view of six ongoing morphosyntactic changes in Toronto.

Similar to the findings across the phonetic features, adolescent peaks are visible across five out of six of the morphosyntactic changes.\(^1\) Across these changes, the highest rates of the innovative

\(^1\)Tagliamonte and D’Arcy (2009:71) suggest the rate of change impacts on the presence or absence of a peak. For changes approaching completion, the rate of change is so slow that peaks are not visible in apparent time; hence their absence in two of the morphosyntactic changes. This is discussed more fully in Section 5.
form are visible in either in the 13-16 or the 17-29 year old age group. Taken together with the results from sound change, this evidence provides strong support for the model of incrementation as the driving mechanism of language change. In other words, where there is change in progress, preadolescents are predicted to lag behind the leading adolescents. However, while the results from these studies both provide support the general model of incrementation, examination of the details reveals some inconsistencies; specifically, how gender interacts with the progression of change.

2.2 Adolescent Peaks and Gender

When the trajectories of change are separated by gender, Labov (2001) and Tagliamonte and D’Arcy (2009) find conflicting evidence. For instance, based on his evidence from Philadelphia, Labov (2001) observed that across the changes, peaks were only present in the trajectories of the female speakers. He used evidence from two well-documented changes to illustrate this finding. Figures 4 and 5 demonstrate this (taken from Labov 2001:456):

![Figure 2: F2 across female speakers.](image)

![Figure 3: F2 across male speakers.](image)

Figure 4 and 5 reveal the different trajectories of change for males and females. While the females show the predicted adolescent peak, the males show a steady increase in the form with no peak and therefore no preadolescent lag. Based on this evidence, Labov (2001:456) argued that adolescent peaks are only evident across the gender leading the change. The two sound changes in Figures 4 and 5 are female-led and hence only the women demonstrated a peak in apparent time.

In contrast to this, when Tagliamonte and D’Arcy (2009:82) separated the trajectories by gender, they found adolescent peaks for both males and females. These are shown in Figures 6 and 7.

![Figure 4: Probability, female speakers.](image)

![Figure 5: Probability, male speakers.](image)

Figures 6 and 7 show that across the morphosyntactic changes, there are peaks in the trajectories of the female and the male speakers. Tagliamonte and D’Arcy (2009:97) suggest that while one gender may be ahead of the other in terms of overall rates of the innovative form, both males and females increment changes in a similar fashion. In other words, adolescent peaks will be present in the trajectories of change for both genders, irrespective of which is leading.

To summarize the discussion so far: peaks in apparent time are reported across both phonetic and morphosyntactic changes. However, within the sound changes, Labov (2001) observes peaks
only for the gender leading the change, in this case in the female trajectories. In contrast, Tagliamonte and D’Arcy (2009) find that peaks are present for both males and females and based on these findings suggest that both genders participate equally in incrementation. Thus a review of the research suggests conflicting predictions: do we expect peaks for both males and females, or only for the gender leading the change? While the evidence so far has considered a number of changes at a variety of levels in the grammar, one limitation is that they are all female-led. To date we do not know what happens in male-led changes. The present study addresses this gap through the investigation of incrementation in a male-led change, TH-fronting. Section 2.3 provides the background and context for this variable.

2.3 A male-led change: TH-fronting

TH-fronting refers to the variable replacement of the dental fricatives [θ, δ] with the labiodental fricatives [f, v] (Wells 1982:328), as in (1):

(1) Well their dad was one of thirteen [fatin] I think [fiŋk] her mum was one of nine as I say she's Catholic [kaflɪk] (Matt, 46)

This innovation has shown an extremely rapid spread through the British Isles and has been subject to extensive sociolinguistic enquiry. It has been found in the south (Tollfree 1999, Trudgill 1999, Kerswill 2003, Britain 2005, Altendorf and Watt 2008, Cheshire et al. 2011, Schleef and Ramsammy 2013), as well as throughout the north and in Scotland (Llamas 1998, Docherty and Foulkes 1999, Mathiesen 1999, Milroy 2003, Flynn 2012). While a number of possible sources have been attributed to TH-fronting, the feature is most strongly associated with London, particularly with the working-class east-end variety (Kerswill 2003:231). The spread of TH-fronting is commonly attributed to a process of diffusion (Foulkes and Docherty 2000:34). As a result, it is often listed as one of a number of innovative consonantal changes, or “torchbearers” of diffusion, currently sweeping the UK (Kerswill 2003:231). The speed of the spread is visible across apparent time studies of TH-fronting where the feature commonly shows a striking increase across generations (Llamas 1998:106, Docherty and Foulkes 1999:51, Trudgill 1999:138, Watt and Milroy 1999:31, Williams and Kerswill 1999:147, Britain 2005:1009, Stuart-Smith and Timmins 2006:174).

Despite its success, TH-fronting is subject to negative social evaluation and typically described as a vernacular feature. It is highly stigmatized, with parents often correcting it in the speech of their children (Tollfree 1999:172, Altendorf and Watt 2008:192). Studies have also shown that it is salient and sensitive to context where speakers use lower rates of the fronted variant in more formal situations (Neilsen 2010:33, Flynn 2012:326). In addition to overt stigma, there is evidence to suggest that TH-fronting receives a degree of covert prestige. For instance, TH-fronting has become a stereotype of Cockney dialect, a variety that is “often overtly despised, but covertly imitated” (Wells 1994:6). Moreover, several researchers have also noted TH-fronting appears to be a familiar symbol of British adolescence, or yoof culture, as it is commonly referred to in the media (Foulkes and Docherty 2000:39–40).

In sum, TH-fronting is a rapidly expanding, non-standard innovation with well-known associations with a working-class London accent, a variety that scores highly for covert prestige. Given this description, it is hardly surprising that males are in the lead for this change (e.g., Labov 2001:293). When studies compare TH-fronting across gender, males are frequently reported as showing higher rates of the non-standard innovation (Llamas 1998, Mathiesen 1999, Kerswill and Williams 1999, 2000, Milroy 2003, Britain 2005).

TH-fronting provides a good fit for the present study as a rapid change enables processes such as incrementation to be thrown into sharp relief. Moreover, examining TH-fronting means that we will be able to view the effects of gender on a male-led change for the first time. Specifically, the analysis will allow me to answer the following questions:

(i) Are adolescent peaks visible in a male-led change?
(ii) Are adolescent peaks a property of both the male and female apparent time trajectories?
(iii) If so, how do the males and female trajectories compare within this male-led change?

Examining these questions provides a further perspective on the nature of incrementation. Namely, what is the relationship between gender, one of the most pervasive factors in the sociolinguistic
research, and incrementation, the mechanism which drives language change? Examining the details of incrementation will not only shed light on the process itself, but possibly also contribute to our understanding of the development of gender-based patterning within the community at large. I turn now to the study’s data and methodology.

3 Data and Method

3.1 The community and sample

The data came from Hastings, a medium-sized coastal town situated about 60 miles south of London which sits within the general Southern British English dialect area. As is the case for much of the UK, the southeast has been subject to processes of *regional dialect leveling* where large areas become linguistically homogenous (Kerswill 2002:186, Britain 2010:197). Commonly, the influence of culturally dominant cities plays a key role in this process, particularly in the diffusion of innovative forms (Trudgill 1983:52–87). For Hastings, this is London, an area which is strongly associated with TH-fronting (Section 2.3), therefore we predict that this variable will have taken root in this speech community, too. The sample consisted of 47 speakers stratified across four age-cohorts with a roughly 50/50 gender split. Table 1 shows the sample structure. Crucially, the inclusion of an adolescent and a child cohort within the sample means I can test for the presence of an adolescent peak and therefore test the model of incrementation within this male-led change.

<table>
<thead>
<tr>
<th>Age</th>
<th>Male</th>
<th>Female</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Old (65-90)</td>
<td>4</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>Middle (35-50)</td>
<td>6</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>Adolescent (16-18)</td>
<td>4</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Child (8-10)</td>
<td>8</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>Total</td>
<td>22</td>
<td>25</td>
<td>47</td>
</tr>
</tbody>
</table>

Table 1: Sample stratified by age and gender.

In order to control the sample as much as possible, only members of the community who had been born and raised in Hastings were eligible to take part. Participants were recorded using traditional sociolinguistic interviews (Labov 1984). The data were transcribed orthographically using Transcriber (Boudahmane, Manta, Antoine, Galliano and Barras 2008).

3.2 Analysis

The variable context was restricted to the voiceless dental fricative /θ/ contexts and the data were subject to auditory analysis. In accordance with type/token issues (Wolfram 1993:214), high-frequency items such as think, thing, nothing etc. were capped at ten tokens per speaker interview. Neutralized contexts, where the phonetic environment may promote or inhibit fronting through a process of assimilation (e.g., fifth, both think, south facing) were excluded. A preliminary pass of the data revealed a number of possible realizations (see Holmes-Elliott 2015 for details). However, following the removal of minority variants, and those with restricted distribution, the variable demonstrated a two-way split in terms of the standard dental [θ] and the non-standard labiodental [f] or ‘fronted’ tokens. Following these exclusions, a total of 3,006 tokens were considered in the variable analysis.

4 Results

4.1 Overall distribution
Table 2 shows the overall distribution of the majority variants [θ] and [f].

<table>
<thead>
<tr>
<th></th>
<th>[θ]</th>
<th>[f]</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>1315</td>
<td>1691</td>
<td>3006</td>
</tr>
<tr>
<td>%</td>
<td>44</td>
<td>56</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 2: Overall distribution of majority variants.

The figures in Table 2 reveal robust variation for this form in Hastings with the non-standard form used more than half of the time. In order to establish whether this is a change in progress, the variation must be considered across the age cohorts. Section 4.2 presents the apparent time analysis.

### 4.2 Apparent time

Figure 8 shows the rates of the non-standard [f] variant when the results are separated by age.

![Figure 6: TH-fronting across apparent time.](image)

The patterns in apparent time reveal a number of findings about both the progression of change and the incrementation of this form in Hastings. First, across the three adult cohorts there is a rapid increase in the innovative, non-standard form. In the older-speaker cohort only 10% of the tokens are realized using the fronted variant. This rises to 34% in the speech of the middle cohort and the rate of use more than doubles between the middle and adolescent speakers who use the form 78% of the time. Similar to many previous analyses (see Section 2.3) the rate of TH-fronting shows a rapid increase over time, with use of the non-standard form increasing by over 70% in the space of three generations.

More important for the present study is the rate of use in the preadolescent age group. The results in Hastings show that for this feature, the youngest speakers show lower rates than the adolescents. In short, TH-fronting in Hastings behaves as predicted; the children lag behind the leading adolescents, resulting in an adolescent peak in apparent time. These initial results suggest that TH-fronting in Hastings increments in the same fashion as reported by previous analyses. However, what do the apparent-time trajectories look like when the data are separated further by gender? Is TH-fronting a male-led change in Hastings? And if so, does incrementation advance in the same way as previous analyses have shown for the female-led changes? Will both males and females show a peak in apparent time, or only the leading gender? Section 4.3 presents the results as they pattern in terms of gender.

### 4.3 Gender

Figure 9 shows the results in apparent time separated by gender.
Figure 9 demonstrates a number of important patterns in the data. First, across all four age-cohorts, males are visibly ahead of the females. The difference is more pronounced in the old cohort (males 17% and females 2% non-standard form) and the middle cohort (males 55%, females 7% non-standard form). Further, chi-square tests of independence (Fisher’s) revealed a highly significant association between gender and rates of TH-fronting where males used higher rates than females within the old, $\chi^2(1, N=826 = 54.3, p<.001)$, and in the middle cohort $\chi^2(1, N=878 = 221.42, p<.001)$. Within the adolescent cohort, males show slightly higher rates than females (80% versus 78%, respectively) a chi-square test of independence revealed that this result was not significant, $\chi^2(1, N=760 = 0.78, p=.38)$. What the results across the three older cohorts show is that while this change is male-led during the earlier stages, this effect neutralizes over time. This is demonstrated through the striking and significant gender difference for the old and middle cohorts while the gender pattern in the adolescent cohort showed no significant difference. Despite the neutralization of the gender effect, it is clear that TH-fronting in Hastings started out as a male-led change.

Examining the trajectories of change for both genders across all four age cohorts shows that both the male and female preadolescent speakers lag behind the leading adolescents. Essentially, there are adolescent peaks across apparent time for both genders, not just the leading males. Further inspection of the preadolescent cohort shows that they replicate the gender patterning present in the older and middle age cohorts. A chi-square test of independence revealed that this difference was highly significant, $\chi^2(1, N=542 = 12.01, p<.001)$. This result suggests that as well as exhibiting more conservative rates of TH-fronting, the children also replicate the more conservative gender pattern of the older adult population where the males show significantly higher rates than the females. Finally, while there are peaks across both genders, the trajectories of change look quite different: there are more dramatic differences between the age cohorts for the female speakers compared to the males. Compare in particular, 7% in the middle aged females and 76% in the adolescent females. This finding shows that, at this point in time, the change is expanding more rapidly among the female speakers.

The results are summarized below:
(a) Comparison of rates across the three older cohorts revealed that TH-fronting was an extremely rapid change in Hastings, with rates rising from 10 to 76% across three generations.
(b) The preadolescent speakers showed lower rates than the leading adolescents: TH-fronting exhibited the predicted adolescent peak in apparent time.
(c) Separating the speakers by gender revealed that TH-fronting was a male-led change. However, while the old and middle speakers showed pronounced and significant gender differences, this was neutralized in the adolescent cohort. The preadolescents replicated the conservative gender patterning.
(d) The apparent time trajectories revealed adolescent peaks for both genders, not just the
leading males. However, the trajectory of change was more pronounced across the female speakers.

What are the wider implications of these results with regards to the relationship between gender and incrementation? I turn now to the discussion, framed by the original research questions.

5 Discussion

The first question considered whether adolescent peaks would be visible in a male-led change. The results from Hastings suggest that, similar to the female-led changes discussed in Section 2.1, adolescent peaks are also a property of male-led changes. In other words, these results indicate that there is no gender-asymmetry in the progression of change: where there is change in progress, adolescents will lead and children will lag behind, regardless of gender. These results provide further support for Labov’s (2001:455) claim that adolescent peaks are indeed a “general requirement of change in progress” and that this applies to both female and male-led changes. Second, as previous findings have shown conflicting evidence with regards to whether peaks are predicted across both genders or only the leading gender, the apparent time trajectories were examined across both males and females. Here the evidence echoed the findings of Tagliamonte and D’Arcy (2009) where peaks in apparent time were present for both genders, not just the leading males. Overall, these findings suggest that all changes increment in a similar fashion. The final question sought to compare the trajectories of change across males and females. Examination of the data revealed that the peak in apparent time was more pronounced across female speakers compared to males. There are two reasons for this difference in trajectories: first, the relative stage of the change for males compared to females, and second, how the children replicate the more conservative gender pattern present across the older adult speakers. I deal with each of these aspects in turn, starting with the stage of a change and how this impacts on the apparent time trajectory.

Linguistic research demonstrates that language change does not progress in a linear fashion; changes advance slowly at first, accelerating through the mid-point of their lives before finally slowing down again as they reach completion. This creates the characteristic S-curve progression of linguistic change (e.g., Aitchison 1995:87). As a result of this S-curve, changes exhibit different profiles in apparent time depending on their stage of development. This point is illustrated through the different trajectories of change across males and females in the present data. The findings revealed that Hastings echoed the majority of previous studies of TH-fronting where males were in the lead. Given the extremely high rates among the males, it is likely that this change is nearing the end of its life within this group. This is in contrast to the female speakers where the dramatic differences in rates between the adult age cohorts indicate that the change is still in full swing.

However, the difference in rates was also more pronounced across the female adolescents and children compared to the males. Put simply, both sides of the peak were more striking across the female speakers. While the stage of the change may explain the more prominent increments across the female adults, it is the marked gender split evident in the preadolescent speakers which causes the dramatic difference between the two youngest groups. In short, the pronounced spike for females is caused both by the relative stage of the change (for females compared to males) and because the children replicate the gender patterning of the adult population. This observation illustrates a further facet of incrementation; namely how this process relates to the acquisition of variation. Evidence from this area of research can shed light on the reasons for the marked gender asymmetry for this variable in the children’s speech.

Recall Section 2.1, which described incrementation as resulting from a process of sociolinguistic maturation whereby children orient away from their caregivers and towards their peers. Research into the acquisition of variation has shown that children acquire the sociolinguistic patterns associated with their native dialects through the input they receive via Child Directed Speech (CDS) (e.g., Foulkes et al. 2005, Smith et al. 2007). Through this caregiver input, children not only learn the linguistic constraints of their dialects, but the social ones, too. Whether they do it consciously or not, caregivers scaffold the development of their children’s sociolinguistic competence by moderating their speech. An example of such behavior comes from Foulkes et al.’s (2005) study of the role of caregiver input in the acquisition of variation of a northern English dialect. Here they found that caregivers used less of the local non-standard forms when they spoke to their children compared to community norms. Moreover, they found that the caregiver speech contained
even more standard variants when it was directed at daughters compared to sons. Based on this finding, Foulkes et al. (2005: 198) suggest that “…mothers are tuning their phonological performance in line with their child’s developing gender identity. Mothers of boys use a high proportion of nonstandard or local variants in speech to their sons, since they expect their sons to grow up to use those variants. By contrast, mothers of girls may be more concerned to ensure that their daughters learn to use the positively evaluated variants in preference to the more localized ones”. The evidence from Hastings would suggest that, for a spell at least, this is exactly what happens: girls do use markedly less of the non-standard form than their male counterparts. In addition to transmitting the lower rates of the innovative form to their children, parents also impart the sociolinguistic norms, such as gender patterning, of the wider community. Part of the incrementation process therefore not only involves an increase in frequency of a form, but also some degree of reorganization of the form as it patterns within the wider sociolinguistic system. Indeed, as observed by Labov (2007), incrementation is not limited to frequency but also includes the “extent, scope, or specificity of a variable” (2007:46). It may be that during their development, as the Hastings children increase their frequency of the variable, the females will increase their increment to a greater extent than the males so that they replicate the neutralized gender patterning evident in the adolescent cohort. Further real-time research on these data will allow this hypothesis to be tested empirically.

6 Conclusion

The results presented here provide further support for the model of incrementation as the driving mechanism of linguistic change and further, that adolescent peaks may indeed be a universal aspect of language change in progress. The details, as they pertain to gender, echo the findings of Tagliamonte and D’Arcy (2009) where no gender asymmetry was found – both the male and female trajectories exhibit a peak in apparent time. This result further highlights the universality of this process as it applies equally to both females and males irrespective of which gender is leading the change in the community at large. The precise nature of the peaks results from both the characteristic S-curve of language change and also how incrementation interacts with another key process in sociolinguistic development: the acquisition of variation. The exact extent to which children can throw off the linguistic models of their parents cannot be garnered from apparent time. In order to gain a fuller picture of incrementation, not only in terms of a form’s frequency, but also with regards to its embedding within the wider system, this developmental process must be observed directly. Further research through a real time analysis of the preadolescents in the current study will offer further insights into this fundamental process of linguistic change.

References


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