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Cardiff English: A Real Time Study of Stability and Change between Childhood and Mid-Adulthood

ABSTRACT

This article describes a real time panel study of a small number of working and middle class female speakers recorded in Cardiff at three points in time over a period of 35 years. The first recordings were made in 1977 when the informants were ten years old. The second date from 1990 when they were young adults, and the third from 2011 when they had entered into mid-adulthood. The linguistic variables investigated were h-dropping and the realisation of /r/ as an approximant or tap. Three issues were addressed. First, the two variables were categorised into indicators or markers/stereotypes on the basis of social and stylistic variation. This served as a basis for the second question, which was to discover if the patterns of change over time were in accordance with those predicted by the literature, with indicators remaining stable and markers/ stereotypes being age-graded. Finally, we looked at individual variation.

Keywords: Cardiff English; age-grading; real time panel study; h-dropping; indicators and social markers; language change; linguistic variables; social awareness; social and stylistic variation

Cardifska angleščina: Študija stabilnosti in sprememb med otroštvom in srednjo odraslostjo

POVZETEK

Članek opisuje ugotovitve panelne študije v realnem času, ki je bila opravljena na majhnem vzorcu ženskih govork, pripadnic delavskega in srednjega družbenega razreda iz Cardiffa. Snemanje njihovega govora je bilo opravljeno trikrat v razdobju petintridesetih let. Prvi posnetki so bili narejeni leta 1977, ko so bile govorke stare deset let. Drugo snemanje je bilo opravljeno leta 1990, ko so bile govorke mlade odrasle osebe, in tretje leta 2011, ko so govorke že vstopile v obdobje srednje odraslosti. Opazovali smo dve jezikovni spremenljivki in sicer opuščanje glasu /h/ na začetku besed in uresničitve glasu /r/ kot drsnik ali kot vibrant. Zastavili smo si tri raziskovalne cilje. Najprej smo obe spremenljivki označili kot pokazatelje ali stereotipe družbene in stilistične raznolikosti govora. To nam je služilo kot podlaga za drugo raziskovalno vprašanje, katerega cilj je bil ugotoviti, ali so bili časovni vzorci sprememb v skladu z napovedmi, ki jih navaja literatura, to je da pokazatelji ostajajo stabilni, stereotipi pa so povezani s starostjo. Na koncu smo ugotavljali tudi individualne razlike v govoru.

Ključne besede: cardifska angleščina; starostno razvrščanje; panelna študija v realnem času; opuščanje/h/; pokazatelji in družbeni označevalci; jezikovna sprememba; jezikovne spremenljivke; družbena ozaveščenost; družbena in stilistična raznolikost

Cardiff English: A Real Time Study of Stability and Change between Childhood and Mid-Adulthood

1 Introduction

In this paper, we discuss longitudinal real time speech data from a small number of female speakers who were recorded at four points in time over a period of 35 years. The samples were collected in Cardiff, the capital and largest city of Wales situated on the south-east coast. The eleven/five speakers selected for the present study form a small sub-sample of a corpus originally comprising 80 children (Mees 1983). The first recordings date from 1977, when the participants were ten years old, and represent their childhood speech. Most of the speakers (75) were reinterviewed in 1981, when they were young adolescents; these data will not be discussed here (the results are reported in Mees 1983, 1990). The third and fourth recordings took place in 1990 (56 speakers) and in 2011 (five speakers); see Table 1. The samples from 1990 characterise the participants' speech as young adults, entering the labour market and starting family life, while the newest samples capture their language patterns in mid-adulthood, having settled into regular employment and carrying family responsibilities (Labov 2001, 101).¹ Admittedly, the last of the recordings constitutes a very small sample, but it can nevertheless give a first indication of some of the fluctuations in language use in the course of individual lifespans.

Year of recording	1977	1981	1990	2011
No. of speakers	80	75	56	5
Sub-set in this study	11	11	11	5

TABLE 1. Size of speaker samples (total and sub-set used in this study).

Our main objective is to shed light on the phenomenon of age-grading ("the variation ... associated with individuals at different ages", Meyerhoff 2011, 153), which real time studies are ideally suited to investigate (see section 4). We are particularly interested in how social awareness affects the extent to which the pronunciation of sounds is changed, and we therefore selected two phonological variables for scrutiny, one which is highly stigmatised in the community (h-dropping) and one which does not appear to evoke social comment (the realisation of /r/ as an approximant or tap).

Three questions are addressed, which we attempt to answer by correlating the linguistic variables with social class, speech style and age/time. Firstly, we analyse the social and stylistic variation in the speech of the ten-year-olds. On the basis of this analysis, the variables are categorised according to the amount of social awareness the speakers attribute to them, using Labov's distinction between indicators, markers and stereotypes (see section 5.3). This information is needed to address the second issue, which is to examine how these variables develop across the informants' lifespans. Since we have snapshots of informants in pre-puberty, in their early twenties and in their mid-forties, we are able to see if confirmation can be found for the general assumption that "once the features of the sociolect are established in the speech of young adults, under normal circumstances those features remain relatively stable for the rest of their lives" (Chambers 2009, 197). In particular, we wish to

¹ The speakers actually ranged between 9–11 in 1977, 13–15 in 1981, 22–24 in 1990, and 43–45 in 2011.

discover if the variables investigated behave in the way predicted by the literature, with indicators remaining stable and markers/stereotypes being age-graded. Our final goal, inspired by Macaulay (1977, 57–60), is to establish if a rank ordering of the individuals according to their social status (defined on the basis of occupation, education and residential area) correlates with their scores for the linguistic variables. In a few cases, the social status of the informants had changed, which made it possible to examine if social mobility had affected their speech.

2 Data Collection

2.1 The Original Cardiff Study

The original Cardiff study (Mees 1977, 1983) was inspired by the work of Trudgill (1974) in Norwich and Macaulay (1977) in Glasgow, which were the two largest British studies modelled on Labov (1966) at the time. Since the study dealt with children, other important sources of inspiration were Reid (1976, 1978) and Romaine (1975, 1978), who both investigated linguistic variability in the speech of Edinburgh schoolchildren and demonstrated that awareness of the social significance of linguistic variables develops at an early age.

The 1977 sample of speakers was drawn from three social classes and both sexes. In order to ensure representativeness of the city of Cardiff, the children were selected from 15 different primary schools located in geographically as well as socially different areas. With the help of an inspector of the Education Authority, eight areas were selected. The social status of these areas was assessed on the basis of the five social and economic measures used in the 1971 census. An additional subjective assessment of the eight areas was provided by a professor at the Department of Sociology at the University College of Cardiff (Mees 1983, 39–42).

2.2 The Present Study: A Small Sub-Sample

As we saw in Table 1, the sub-sample used in this study consisted of 11 speakers, five from the middle class (MC) and six from the working class (WC). In selecting the sub-set of informants, a number of factors had to be considered. Many of the original 1977 recordings were unsuitable because they were too short. As stated by Milroy and Gordon (2003, 164), "if the number of tokens is lower than 10, there is a strong likelihood of random fluctuation, while a figure higher than 10 moves towards 90 percent conformity with the predicted norm, rising to 100 percent with 35 tokens"; see also section 7. Furthermore, since we wished to focus on changes in Cardiff English, only subjects who had lived in Cardiff most or all their lives were eligible for this particular study. Finally, to avoid introducing yet another parameter, it was decided to include either male or female speakers only. These criteria naturally restricted the number of potential informants. However, the greatest challenge was tracing the original participants in the 2011 resurvey. Twenty-one years had passed since the informants were last interviewed, and during that time many had moved and changed their surnames through marriage, which made the process of finding them considerably more difficult. Eventually, five female informants were located (three from the WC, and two from the MC). Some were found by means of former addresses of the informants or their parents; some by the website Friendsreunited.co.uk; and some by the online British Telecom phone book. For details of the 2011 study, see Osorno (2011).

Although it is impossible to generalise on the basis of small-scale studies, even a very limited sample can provide interesting results. For instance, Sankoff (2004) studied two boys who took

part in the "7 and Up" project, a longitudinal British documentary series initiated in 1963 in which 14 seven-year-olds from widely ranging backgrounds were re-interviewed at seven-year intervals. Sankoff's aim was to determine if individuals can and do make alterations to their phonological systems in adolescence and young adulthood. She was able to show that these two speakers had indeed made some significant changes to their speech in post-adolescence, albeit in different ways. However, the two speakers had unique personal histories, and Sankoff reminds us that most individuals do not modify their phonological patterns over their lifetimes. The Cardiff sample is also small, but the limited sample size does have the advantage of enabling us to focus on the individual subjects as well as the groups. As stated by Maclagan, Gordon and Lewis (1999, 19), "unless data is available for individual speakers across variables, there is no way of knowing the extent to which individuals within the group are behaving consistently across the variables". As we shall see in section 8, the patterns that emerge for the Cardiff subjects within each of the two social classes are so regular that there is some basis for assuming that the sample can be generalised to a larger population. Furthermore, we are able to refer to the results of studies of earlier sub-samples of the Cardiff informants (Mees 1983, 1990; Mees and Collins 1999) to discover if the findings in this paper can be corroborated.

3 Types of Change

As stated in section 1, the main focus of this article is the phenomenon of age-grading, which is a term used to refer to "the instability of an individual's use of a feature over the lifespan against a backdrop of community stability for the same feature" (Wagner 2012, 373). Put simply, a variable is age-graded if "all speakers of a community use more tokens of one variant at a certain age and more tokens of another variant at another age" (Meyerhoff 2011, 153). Thus there is no question of a change in progress in the speech community as such, but merely fluctuation within the speech of individuals at different points in their lives; see Wagner (2012) for a discussion of linguistic change at community and individual levels.

Since Sankoff (2005), the traditional concept of age-grading has been divided into two types, age-grading proper (defined above) and lifespan changes. Lifespan changes are those where "individual speakers change over their lifespans in the direction of a change in progress in the rest of the community" (Sankoff 2005, 1011). In addition to age-grading and lifespan changes, the relationship between variation and change in the individual and the community can be manifested in three other ways: stability, generational change and community-wide change (see Table 2). These will be explained briefly below, but for a more complete overview, see Sankoff (2005); Sankoff and Blondeau (2007); Meyerhoff (2011, 152–59); and Wagner (2012), all adapted from Labov (1994, 83–84).

Stable variables are variables where neither the individual nor the community exhibits any change. They are well established as indicators in a community (see section 5.3 below) and "each age cohort of the same class, sex, ethnic background and other social characteristics, will be similar to older and younger groups in the use of variants and the amount of style-shifting" (Chambers 2009, 120). Community-wide change is the opposite of stability, involving a whole community adopting a new variant at approximately the same time. Finally, the term generational change refers to variables where individuals remain stable but the community changes; in other words, a change where each new generation uses the new variant more frequently. The data reported below concern stable and age-graded variables (1 and 2a in Table 2).

Interpretation	Individual	Community
1. Stability	stability	stability
2a. Age grading	change	stability
2b. Lifespan change	change	change
3. Generational change	stability	change
4. Communal change	change	change

TABLE 2. Relationship between change and stability in the individual and the community. (Sources: Labov 1994, 83; Sankoff and Blondeau 2007, 563; Meyerhoff 2011, 153.)

4 Real Time Panel Studies as the Best Approach to Study Stability and Age-Grading

As Tagliamonte (2012, 55) observes, "[a]ny claim for linguistic change requires evidence from two points in time. Apparent time is good. Real time is better". Real time studies involve analysing the same or similar speakers at different points in chronological time while apparent time studies make inferences about the way people speak by comparing speakers of different ages at a single point in time. Tillery and Bailey (2003) challenge the general assumption of the superiority of real time over apparent time, and argue that "[r]eal time approaches … are no more a 'gold standard' for the study of language change than the apparent time construct is" (2003, 364). They provide an interesting discussion of the strengths and weaknesses of real vs. apparent time, and of panel (same speakers) vs. trend surveys (comparable speakers). Despite certain drawbacks of real time panel studies (the informants may move or die; the sample is likely to become less representative over time), the comparability of the methods and the possibility of examining changes in individual vernaculars lead Tillery and Bailey (2003, 361) to conclude that they are "particularly useful for addressing issues of age grading and the stability of individual vernaculars". In the real time panel study reported in this paper, we focus on one variable which is stable, the realisation of /r/ as a tap or a post-alveolar approximant, and one which is age-graded: h-dropping.

Real time panel studies are rare, and "[b]ecause of the inherent difficulty involved in relocating and reinterviewing large numbers of subjects, the majority of panel studies have been restricted, typically comprising one subject ... or a small handful of subjects" (Wagner 2012, 377); for examples of re-surveys involving the same speakers, see Tagliamonte (2012, 53); Wagner (2012, 377); Rickford and Price (2013, 145). Another point is that longitudinal studies normally employ merely two time points (Rickford and Price 2013, 164). Two exceptions are Cukor-Avila and Bailey (1995), who re-interviewed informants from the rural Texas community of Springville a number of times over a period of ten years, and the Montreal French study consisting of three large corpora (1971, 1984 and 1995) including data from 14 of the same informants over the 24year period (for details, see Blondeau 2001; Sankoff 2005). Our own study is another exception, containing snapshots from four points over a 35-year period (1977, 1983, 1990 and 2011).

5 Social and Stylistic Variation

Social and stylistic variation both crucially hinge on awareness of the social significance of the linguistic variables. Certain variants pass unnoticed whilst others arouse strong social judgements. The first question we attempt to answer below is whether different degrees of social awareness are

attached to the variables investigated (section 8.1). If there is a large difference between WC and MC speakers and if all speakers use fewer low-status variants in formal than in informal speech, it is likely that the variable is socially stigmatised.

5.1 Social Class

Social class has been, and perhaps still is, the most widely used social variable in sociolinguistic studies (J. Milroy and L. Milroy 1998, 55). Research has shown that patterns of social stratification tend to correlate systematically with linguistic variation in most urban areas, at least in English-speaking countries. At the same time, social class is also one of the factors which have been most difficult to conceptualise, quantify, and interpret (J. Milroy and L. Milroy 1998, 54; Foulkes and Docherty 2007, 53) since it is possible to base the classification on different measures, different combinations of measures, and different weightings of measures. One much debated issue is whether or not one should use a combined index of several indicators. Many researchers are of the opinion that the best prediction of social class is achieved by a combination of different factors (see Kiesling 2011, 59–60). However, others argue that such comprehensive indices are unnecessary. Some use occupation as the sole determiner (e.g. Macaulay 1977); certainly "it is hard to imagine a composite index that excludes occupation" (Ash 2004, 419).

The original study of Cardiff schoolchildren (Mees 1983, 1990) relied solely on father's occupation to determine the informants' social class, this being the only possibility when dealing with children and young teenagers since they have no income and are all at the same stage of education. However, this measure obviously does not capture the changes that take place as each child becomes an adult. At later points in life, their final levels of education may be at variance and they may hold jobs with varying social status (and also different to that of their parents), or they may have moved from a WC to a MC locality. Furthermore, the measures are not independent factors but interrelated in the sense that a higher level of education is likely to lead to a more prestigious occupation with a higher income, and thus enabling the individual to move to a higher-status neighbourhood.

In addition to the question of how to determine social class membership, there is also the issue of how many social classes are needed. Obviously, a higher number will result in more fine-grained observations, but such a breakdown requires a large number of informants. As Tagliamonte (2012, 26) states, many "studies of social class have been successfully carried out with binary divisions", and a number of researchers have opted for a crude dichotomy of WC vs. MC, which to all intents and purposes represents a distinction between manual and non-manual labour (or blue collar and white collar). In their Glasgow study, Stuart-Smith, Timmins and Tweedie (2007, 229), concluded that "[w]hile such sampling of social class inevitably simplifies continuous sociolinguistic variation into two categories, we were unprepared for the extent and nature of the polarisation that emerged". However, perhaps this is not so surprising in view of Trudgill's observation that "the biggest class division in modern British society is that which exists between the working and the middle classes" (Trudgill 1974, 62).

The present Cardiff study also employed a dual classification model of WC and MC. However, basing the categorisation on occupation alone was felt to be too imprecise since we wished to rank the informants individually and identify potential changes in the social status of the individual, and therefore needed a more sophisticated model. It was decided to use a weighted combination of measures (occupation, education and residential area); see section 5.2.

5.2 Social Classification of the Informants in the Present Study

After the 11 Cardiff informants had been selected, they were ranked according to a threecomponent index, based on the criteria of occupation, education and locality (see Table 3 for details; note that all names have been changed for the sake of anonymity). Father's occupation was used in the 1977 sample but was replaced in 1990 and 2011 by the informants' own occupations. Locality was included because this was believed to be descriptive of the informants' social network. As shown by Eckert in her study of "Jocks and Burnouts" (Eckert 1989), individuals are much affected by their peer group, particularly during adolescence. Cardiff consists of a large number of areas, but each may be characterised as being overwhelmingly inhabited either by the MC or the WC (section 2.1). Since most informants went to a school located in the area in which they lived, the WC children will have interacted with peers from the same socio-economic class and, likewise, the MC children will have been educated with peers having socio-economic backgrounds similar to their own.

As the social circumstances of some of the informants had changed in the course of their lives, three social class indices were constructed, one for each sub-sample. For instance, even though the informants in the 1977 sample all had the same level of education (all being primary schoolchildren), this did not remain the same as some left school while others went on to take A levels and even university degrees. Mainly as a result of different educations, the informants have also moved on to different occupations, and live and work in different localities.

The indicators were arranged in order of relative importance (Milroy and Gordon 2003, 43). The father's or the informant's occupation was multiplied by 2, education by 1 and locality by 0.5 (see Appendix A). The mean of the indicators was then calculated for each informant at each point in time (Appendix B) and finally the grand mean of the two (in five cases three) points in time was computed. Table 3 provides an overview of the rank ordering (from highest social status to lowest) of the 11 informants within each of the two social classes based on this grand mean. The localities in parentheses are areas outside Cardiff and have thus not been included in the calculations. The names shown in bold-faced type are the informants recorded at all three points in time.

TABLE 3. Social class index based on (1) father's occupation (1977) or own occupation (1990 and 2011), (2) education and (3) locality. Informants ranked from highest to lowest social status. Those recorded at all three points in time are shown in bold-faced type.

Middle Class	Age	Occupation	Education	Locality
	11	Father: economics lecturer		Llanishen
Angie	25	Own: student	University – Librarian	(Aberystwyth)
	46	Own: administrator of planning licences		(Aberystwyth)
	10	Father: assistant county treasurer		Rumney
Judy	24	Own: accountant	University – History	(Uxbridge)
	45	Own: supply teacher		(Thame)

	11	Father: stock control manager		Whitchurch
Alice	25	Own: court clerk	A levels	Whitchurch
	-	-	-	-
	10	Father: press officer		Whitchurch
Sharon	24	Own: clerical work	A levels	Whitchurch
	-	-	-	-
	10	Father: sales representative		Llanrumney
Stella	24	Own: teacher	Teacher training college	Roath
	-	-	-	-
Working Class	Age	Occupation	Education	Locality
	9	Father: butcher		Splott
Gina	23	Own: legal secretary	O levels	Splott
	44	Own: hotel HR and training officer	Law degree	Splott
	10	Father: lorry driver		Splott
Rachel	24	Own: pub chef/ waitress	College – Hotel and Catering	Splott
	45	Own: clerical work	_	Splott
	9	Father: car mechanic		Ely
Michelle	23	Own: sales assistant	CSE	Ely
	-	-	-	-
	10	Father: coach driver		Splott
Mandy	24	Own: cigar factory packer	Secretarial course (not completed)	Splott
	45	Own: carer – nursing home		Splott
	9	Father: packer		Splott
Melissa	23	Own: private nanny/ pub waitress	One O level + College – Nursing (not completed)	Splott
	-	-	-	-
	10	Father: steelworker		Ely
Heather	24	Own: waitress	Finished school at 15	Ely
	-	-	-	-

In the discussion of the results, we shall focus mainly on the five informants for whom we have data for all three points in time. Figure 1 shows how the social class affiliation of these informants develops across their lifespans. In 1977, Angie is the highest ranking girl in the MC, followed

closely by Judy. The two girls are identical as regards social status in 1990 and this remains the case in 2011. Both appear to have risen to a higher step on the social ladder as compared with their childhood, but it must be borne in mind that the 1977 figures do not include education, so the figures are not completely comparable. In the WC, Gina and Rachel follow the same path, both having higher-status occupations than their fathers. Mandy is notable for showing very little fluctuation in her social status. From the point of view of social mobility, Gina and Rachel are perhaps the most interesting because they are very close to entering the MC, and one would predict that their speech patterns would change accordingly.





5.3 Social Awareness: Indicators, Markers and Stereotypes

The notion of consciousness is of crucial importance to Labov's approach to the study of language variation and change, and consists of a complex of factors which are to an extent interrelated (see Kristiansen 2010 for a discussion). Labov (1972, 314) suggested a three-way distinction of degrees of consciousness of linguistic variables. They are summarised in Labov (1994, 78): stereotypes ("overt topics of social comment"), markers ("not at the same high level of social awareness" though exhibiting "consistent stylistic and social stratification") and indicators (socially though not stylistically differentiated and "never commented on or even recognized by native speakers"). The difference between indicators and markers/stereotypes can be measured objectively in terms of amount of social and stylistic variation. However, it is more difficult to establish the difference between markers and stereotypes as it "lies in the level of consciousness: stereotypes are subject to metapragmatic discussion, while markers are not" (Eckert 2008, 463). For instance, when the recordings of the children were made in 1977, it was striking how often the teachers mentioned their tendency to "drop aitches" (i.e. a stereotype), while the realisation of /r/ was never commented on (an indicator).

For our purposes (research question 2), it is worth noting that age-graded change involves features that have a high degree of social awareness (Labov 1994, 111; Tagliamonte 2012, 47), i.e. markers or stereotypes, whilst "[s]table variables are those that are well established as indicators in a community and are not undergoing change" (Chambers 2009, 120). The former should therefore exhibit patterns of style shifting while the latter should not. In the present study, stylistic variation was measured by means of a simple two-way division into reading passage style (RPS) and interview style (IS).

6 What is the Model of English Aspired to by Cardiff Speakers?

Since the purpose of this paper is to see if there are changes in the use of standard and non-standard features, it is important to know which variety of English the speakers orient themselves towards. Walters (2001, 289–290) observes that there are three main influences on South Wales English: English regional dialects (notably the neighbouring areas of England: the West Midlands and the "West Country", i.e. a term covering the south-west of England), Received Pronunciation (RP), and the Welsh language. Cardiff has been English-speaking since well before 1800 (Mees and Collins 1999, 186), and there appear to be virtually no traces of Welsh. Windsor Lewis (1990, 108) goes so far as to say that "as far as influence from what is properly describable as the Welsh language is concerned, there is no single item of general everyday vocabulary, syntax, morphology or phonology in the dialect which can certainly be assigned to a Welsh-language origin, and which is not shared with the general forms of English". Coupland (1988, 50-51) arrives at the same conclusion, stating that not only is "Welsh substratal influence on Cardiff English ... minimal", the Cardiff accent also "bears no close relationship to standard Welsh English pronunciation". However, there is clear evidence of the other two influences mentioned by Walters (West Country and RP), e.g. the presence of dark *l*, and the absence of certain vowel contrasts and of "lilting" intonation tunes. Similar to the West Country, basilectal varieties of Cardiff English employ non-standard present-tense endings and extensive assimilation and elision. Speakers from all social classes are non-rhotic (Wells 1982, 75–76), as in RP, though unlike south-western English accents (Collins and Mees 1990, 87–88).

Thomas (1984, 178) remarks that the model for the more "evolved" Welsh English dialects of the industrial south, in Glamorganshire, and in the eastern counties which border with England is the same as that for most other varieties of British English – RP and Standard English. Coupland (1988, 51) adds: "and this must be particularly true of Cardiff English". Certainly at the time of the original study (1977), RP appeared to be the accent that was regarded as the norm. The situation may of course have changed from the time of the first recordings. Foulkes and Docherty (1999, 11–12) draw attention to the emergence of influential non-standard varieties in Britain which may compete with the standard as a reference point for speakers. On the basis of analyses of data from the whole of Wales, Garrett, Coupland and Williams (2003, 130) found that RP is regarded as the most prestigious variety overall. However, they speculate that although it is conventionally held that RP is a "regionless" variety in England and Wales, the increased political independence of Wales (manifested, for instance, by the advent of the Welsh Assembly) may result in RP eventually losing its status as the norm and being replaced by an educated Welsh English variety (Garrett et al. 2003, 216–17).

Apart from the evidence from the scholars quoted above, substantiation for the fact that RP appears to be the model emulated can be found in the actual Cardiff data. For instance, Mees (1983, 1987, 1990) and Mees and Collins (1999) documented that glottalisation of /t/ following an RP pattern was on the increase in MC speech. Since Cardiff English, like other Welsh English accents, originally lacked this feature (having a range of other allophones depending on the context), a likely explanation is that the MC speakers imitate RP (cf. the situation in Glasgow, Edinburgh and Belfast, where the target phonological systems of careful speakers are rarely oriented towards RP; see Milroy 2004, 164).

Whatever the case may be, MC usage in Cardiff was in accordance with RP for the three variables investigated here. It is in this case therefore immaterial whether the reference accent was RP or

Standard Welsh English. If the speakers did adjust to an accent other than RP, it was in this respect identical to RP. For a full description of the phonetics of Cardiff English, see Collins and Mees (1990).

7 The Variables

The variables for this study were chosen according to two criteria. Firstly, they had to be examples of either stable variation or of age-grading, which means that we had to be confident they were not recent innovations but were long established in Cardiff English. Secondly, we wanted to include examples of both an indicator and a marker/stereotype. The two criteria are interdependent in the sense that stable variables will typically be ones which do not attract social comment whereas variables which exhibit age-grading are often stigmatised (see section 5.3 above).

Wherever possible, a minimum of at least 30 tokens was counted for each variable for each informant. However, in the samples of 1977, a small number of the recordings included only a few tokens owing to the short length of the interview. Nevertheless, only in a few instances was the number of tokens lower than 10, which, as stated in section 2.2, is considered to be the dividing line between a reliable sample moving towards 90 per cent conformity and a sample which is more likely to show random fluctuations.² Note that in many cases far more tokens than 30 were counted, the highest number being 89, as we continued to register occurrences for all variables until the point of the recording was reached where the minimum for each had been met.

7.1 The Variable (h)

H-dropping, which occurs in most of England, is a strongly stigmatised feature. It was introduced to English via French after the Norman Conquest, initially as a prestige variant (Milroy 1983). Beal (2004, 340) notes that it was not until the eighteenth century that it became stigmatised, the first writer to condemn this feature being Sheridan (1761). Wells (1982, 254) has called it "the single most powerful pronunciation shibboleth in England" and Mugglestone (1997, 107) "a symbol of the social divide". Unlike Scottish and Irish English, "South Wales shares with most of England the tendency to H Dropping" (Wells 1982, 391). For instance, in a short specimen of "unsophisticated Cardiff English", Windsor Lewis (1964, 7) represents *having* and *hard* without /h/.

Traditionally, (h) has been regarded as a single variable, but owing to the varying social significance of dropping /h/ in different linguistic contexts, this study will follow Mees (1983, 107; 1990), who subdivided /h/ into the variables (h¹) and (h²). The variable (h¹) represents lexical items, i.e. words which normally carry a high information load, e.g. main verbs, adverbs, nouns, and adjectives. (h²) signifies grammatical items, which carry relatively little information and comprise items such as auxiliary verbs, pronouns, and relative pronouns. The two classes of words further differ in terms of their frequency. (h¹), which includes words such as *hope, hospital* and *high*, occurs far less frequently than (h²), which contains pronouns such as *he*. However, some lexical words such as *house* and *home* were used regularly, and for some of the informants, they occurred as many as eight times. Following the practice adopted by other researchers (Milroy and Gordon 2003, 163), only the first three tokens of each word were included in order not to skew the data with too many occurrences of one particular type. (Impressionistically, the high-frequency items

² A total of 81 calculations were carried out. These covered three linguistic variables for 11 informants at two points in time, i.e. in 1977 and 1990 (3 x 11 x 2 = 66), and for five of these informants at an additional point in time, i.e. 2011 (3 x 5 = 15). Only in 9 of the 81 calculations was the number of tokens lower than 10.

seemed more prone to h-dropping than less common words.) This procedure was not applied to (h^2) , which consisted of a limited number of items (the only ones documented being *he*, *his*, *him*, *himself*, *herself*, *her*, *who*, and *how*). As this category was specifically set up to deal with these high-frequency words, there was no point in restricting the number of items counted. Note that the frequently used full verb *have* was counted as a grammatical item although in actual fact belonging to the lexical items. Among the child informants, *have* occurred far more frequently than any other lexical word with <h>(Mees 1983, 112–13).

/h/-elision is never permitted in lexical items in RP. However, the loss of /h/ in some grammatical words, particularly pronouns, is quite common in RP in unstressed non-initial positions in connected speech (Cruttenden 2014, 208), e.g. *take him back* /teik Im bæk/. Since h-dropping is frequently found in RP in these environments, and the variables were to be ranked according to their standard or non-standard nature, these contexts were excluded from the (h²) counts. In other words, only items where /h/ is obligatory in RP were computed. In the present study, this category typically included items which occurred in unstressed, initial positions, e.g. *He's (a store manager)*.

7.2 The Variable (r)

Cardiff English /r/ is either pronounced as an alveolar approximant [I] or a tap [r] (Windsor Lewis 1964, 6). The tap allophone is most frequent in intervocalic position, but it also sometimes occurs after certain consonants such as /b v θ /, e.g. *very*, *broke*, *every*, *three*; it is even used as "intrusive r", e.g. in *nana and* (Mees 1983, 89 and 104–5). Coupland (1988, 30) observes that "[t]he tap does not seem to be related to the typically Welsh trilled variant [r], and is acoustically very different from it despite the similarity in the articulatory mechanisms involved". See also Collins and Mees (1990, 91) for a description of how the Cardiff tap differs from the old-fashioned RP tap articulation. It is not clear how long the tap realisation has existed, but since it was described as characteristic by Windsor Lewis in 1964, the variant has been around for long enough for it not to be a recent innovation.

All instances of intervocalic /r/ were calculated, both word-internally (e.g. *very*, *married*) and across word boundaries (*other end*, *mother is*). The latter included situations where /h/ was dropped, e.g. *our house*. Similar to (h^1) , only the three first occurrences of each word were counted.

8 Results and Discussion

In the following, the results of the binary variables (h^1) , (h^2) and (r), will be presented and discussed in relation to the factors of social class, style and age/time. The figures show the percentage of non-standard variants. In addition to group means, we also consider the results for the individuals, focussing particularly on those for the five females who were recorded at all three time points. To ensure that the decrease in the number of informants in 2011 did not skew the overall pattern, the mean results of 1977 and 1990 for each class were re-calculated using only the scores of the five informants who were interviewed at all three stages. The new means did not differ substantially from the original results for any of the linguistic variables. Consequently, below, the results for all 11 informants in 1977 and 1990 are compared with the results of the five informants in 2011.

8.1 Social and Stylistic Variation

Our first aim was to establish whether the 1977 variables chosen for study were indicators or markers/stereotypes by comparing the results for the reading passage style (RPS) and interview style (IS).

In lexical words, i.e. (h^1) , the percentage of /h/ elision in the MC in the IS was zero per cent while the WC dropped /h/ 47 per cent of the time; h-dropping was completely absent from the RPS in both social classes (Figure 2). Thus there was clear social and stylistic variation for this variable, meeting Labov's criterion for a marker/stereotype.



FIGURE 2. H-dropping in lexical items in 1977. Social and stylistic variation.

In the grammatical words, i.e. (h²), h-dropping was again virtually non-existent in the RPS in both social classes: zero per cent in the MC vs. 3 per cent (a single instance) in the WC. However, in the IS, h-dropping was 19 per cent in the MC against 84 per cent in the WC; see Figure 3. It can be seen that there was a huge discrepancy between the two social classes and between the two speech styles. On the basis of this, h-dropping in grammatical words can also clearly be labelled a social marker/stereotype.



FIGURE 3. H-dropping in grammatical items in 1977. Social and stylistic variation.

The scores for (r) (Figure 4) were completely different, showing clear social though little stylistic differentiation. In the MC, there were 14 per cent tap realisations in the IS vs. 11 per cent in the RPS while in the WC [r] was used in 74 per cent of the cases in the IS vs. 90 per cent in the RPS.

Thus, surprisingly, for this variable the figures for the RPS were either the same or higher than those in the IS. On the basis of this, (r) can be categorised as an indicator.



FIGURE 4. Percentage of tap realisations in 1977. Social and stylistic variation.

Note that the RPS results for 1990 and 2011 revealed the same patterns as those for 1977 in the case of all variables, and the RPS scores will therefore not be reported in the sections below. As we have seen in section 5.3, it is generally assumed that indicators remain stable and markers are subject to age-grading. This will be explored in the next sections.

8.2 Variation across Age/Time

Having established which variables were markers/stereotypes vs. indicators in 1977, we can now proceed to look at the time variable. As stated above, our discussion will be restricted to the IS.



8.2.1 The Variable (h¹)

FIGURE 5. H-dropping in lexical items across social class and time. Interview style.

Figure 5 provides an overview of the results for the use of h-dropping in lexical items in the interview style for the two social classes in 1977, 1990, and 2011. From the graph it appears that h-dropping shows sharp stratification ("a wide gap between middle-class and working-class subgroups", Tagliamonte 2012, 26) in 1977, with the MC having no h-dropping while the WC speakers drop /h/ up to almost 50% of the time. Time-wise, from 1977 to 1990, the loss of /h/ for the WC more than halves, moving in the direction of the MC as the informants grow older and reach adulthood. This pattern continues into middle age. Thus, it appears that past the age

of 23 (early adulthood), the use of h-dropping seems to stabilise, as predicted by the literature.

The mean results have been supplemented by Table 4 showing the loss of /h/ for each individual.

TABLE 4. Distribution of h-dropping for (h1) for the individual informants across time. I	nterview
style. Ø indicates the number occurrences where /h/ has been dropped.	

Distribution of	(h ¹) in th	e Intervi	iew style						
	1977			1990			2011		
	No. of			No. of			<u>No. of</u>		
Middle Class	<u>tokens</u>	Ø	<u>%</u>	<u>tokens</u>	Ø	<u>%</u>	<u>tokens</u>	Ø	<u>%</u>
Angie	6	0	0%	31	0	0%	26	0	0%
Judy	15	0	0%	31	0	0%	35	0	0%
Alice	24	0	0%	33	0	0%			
Sharon	7	0	0%	30	1	3%			
Stella	22	0	0%	31	0	0%			
MEAN			0%			1%			0%
Working Class									
Gina	19	3	16%	37	5	14%	29	3	10%
Rachel	6	2	33%	30	2	7%	36	3	8%
Michelle	15	9	60%	26	15	58%			
Mandy	5	5	100%	31	9	29%	30	17	57%
Melissa	12	2	17%	31	2	6%			
Heather	7	4	57%	30	4	13%			
MEAN			47%			21%			25%

The table clearly demonstrates that, except for a single instance in 1990, MC informants consistently pronounce /h/ in lexical items. Thus social mobility appears not to be an issue for this variable: h-dropping is absent in 1977 and this continues to be the case. Although Angie and Judy (the two MC speakers who were recorded at all three points in time) acquire an even higher social status than they had to begin with, awareness of the social significance of this particular variable appears already to have been fully developed by the age of ten.

The results for the WC informants are somewhat more varied, yet still unequivocal: /h/ is dropped considerably more frequently than in the MC. In terms of the time dimension, Table 4 shows a downward trend for the loss of /h/ for all WC informants from 1977 to 1990, some displaying a more significant decrease than others. The trend continues in 2011, except in the case of one of the WC speakers, Mandy, who shows an increase in h-dropping in mid-adulthood. Of the three WC informants for whom we have data at three points in time, two had moved up the social scale (Gina and Rachel) while one remained in the same place in the

hierarchy (Mandy) (section 5.2). Gina and Rachel show a progressive reduction in the amount of h-dropping over the years. Although Mandy also has a significant decrease from 100% in 1977 to 29% in 1990, the downward trend is halted, and in 2011 h-dropping has increased again to 57%. What appears to differentiate these three WC informants is occupation and social ambition. Contrary to Mandy, Rachel and Gina acquired degrees (Rachel went to Hotel and Catering College, and Gina first worked as a legal secretary and later obtained a law degree) and this may have had a standardising influence on their language. In the 2011 interview, Gina states that she has high ambitions, not just for herself but also for her children. "...you want better for your kids...The three of them are really, really good. They're in the top band... so I'm hoping they'll go to uni... I was never pushed, which is a shame". Conversely, Mandy expresses no desire to move up the social scale. Her occupation (carer in a nursing home) does not require her to use prestigious speech, nor, it appears, does her social network, her husband being a lorry driver and her acquaintances being neighbours of the same social standing. All this corresponds well with the findings of Mees and Collins (1999), who showed that the desire to improve career prospects and living circumstances was reflected in the adoption of MC speech features. They investigated a small sub-set of the Cardiff informants (two WC girls without ambitions and two with a strong desire for achievement) at the ages of 10 and 24. Analyses were carried out of the degree of glottalisation of word-final /t/, and it was found that in early adulthood the aspirers had acquired a MC pattern of glottalisation whilst the non-aspirers to a larger extent retained the patterns of their childhood.

This distribution of the variable (h¹) indicates that h-dropping in lexical items in Cardiff is highly stigmatised, corresponding with the findings of other researchers who have investigated this feature in other communities. Not only is its use almost non-existent in the MC, it is also significantly reduced when the WC informants reach adulthood and become more aware of its negative connotations. Even so, the use of h-dropping in this class never falls below approximately 20 per cent, on average, compared to zero per cent for the MC.

It is worth noting that even though Gina and Rachel have moved up the social scale, and today, at least in the sample from 2011 and possibly even that from 1990, would be categorised as belonging to the MC, they do not entirely become MC linguistically: despite approximating MC patterns and dropping fewer /h/s than the other WC informants, they still do not have a frequency of h-dropping as low as that of the lowest-ranking MC speakers who were born into this social class. Thus even though it is possible to modify one's speech in post-adolescence, it appears to be difficult to break the pronunciation patterns which have been established in early life.

Our results indicate that h-dropping is an age-graded variable which stabilises in early adulthood. However, one proviso should be made. Recent work suggests that the spread of h-dropping in Britain "has been halted or even reversed" (Foulkes and Docherty 2007, 63). Thus it is possible that what we have here regarded as age-grading could also be a change in progress. To corroborate this one would need apparent time data.

8.2.2 The Variable (h²)

Figure 6 provides an overview of (h^2) (the degree of h-dropping in grammatical items) in the IS for the two social classes in 1977, 1990, and 2011.



FIGURE 6. H-dropping in grammatical items across social class and time. Interview style.

As compared with (h^1) , this variable, which only included h-dropping in those contexts where /h/ has to be retained in RP, shows even sharper stratification at the age of ten, with a vast gap between the MC and the WC. The MC speakers, who consistently pronounced /h/ in the lexical items, exhibit a higher degree of h-dropping (19%) in grammatical items. The WC informants have a conspicuously high rate of /h/-loss (84%) for (h^2) vs. 47% for (h^1) . Nevertheless, for both social classes, the graph shows the same downward slope for (h^2) as for (h^1) between 1977 and 1990, and flattens out between 1990 and 2011. Thus, as with the variable (h^1) , (h^2) appears to have stabilised in early adulthood, after which little change takes place. Note that the line for the WC is less steep than that for (h^1) in the same social class. Thus there appears to be less awareness of the social significance of h-dropping in grammatical than in lexical items.

An overview of the individual results is presented in Table 5 below.

TABLE 5. Distribution of h-dropping for (h^2) for the individual informants across time. Interview style. Ø indicates the number occurrences where /h/ has been dropped.

Distribution of (h ²) in the Ir	ntervi	ew style						
	1977			1990			2011		
Middle Class	<u>No. of</u> tokens	Ø	<u>%</u>	<u>No. of</u> tokens	Ø	<u>%</u>	<u>No. of</u> tokens	Ø	<u>%</u>
Angie	18	2	11%	45	3	7%	54	3	6%
Judy	53	10	19%	52	2	4%	45	3	7%
Alice	34	2	6%	57	4	7%			
Sharon	6	2	33%	71	7	10%			
Stella	18	5	28%	35	2	6%			
MEAN			19%			7%			6%
Working Class									
Gina	35	26	74%	57	29	51%	46	27	59%
Rachel	39	32	82%	44	30	68%	52	34	65%

Michelle	76	64	84%	68	65	96%			
Mandy	23	18	78%	89	84	94%	69	61	88%
Melissa	64	55	86%	81	56	69%			
Heather	15	15	100%	61	35	57%			
MEAN			84%			73%			71%

In terms of the individual results, Table 5 shows a relatively uniform distribution of the zero variant among members of the WC in 1977. The only exception is Heather, who drops /h/ in all cases. This uniform distribution, however, does not seem to apply to the MC speakers, whose usage ranges from six to 33 per cent. However, not a single speaker has frequencies that are higher than any of the WC speakers. Thus a clear gap between the two classes is not only evident from the means but also from the individual results. As to the development of the variable over time, the MC informants drop /h/ less frequently in 1990 than in 1977. The WC informants, on the other hand, show a varied pattern. Although the general trend seems to be a decrease in /h/loss, two of the informants, Michelle and Mandy, show a considerable increase in h-dropping, omitting /h/ in almost all occurrences. The same mixed pattern is evident for the samples from 2011, with percentages similar to those of 1990. In the middle-class, Angie and Judy retain the patterns of 1990. In the WC, h-dropping has decreased for Gina and Rachel (the two socially mobile informants) between 1977 and 2011 while Mandy actually increases her usage across the same time span. All in all, the individual results indicate that h-dropping of grammatical items has stabilised by 1990, as there are only minor fluctuations between 1990 and 2011, whether these be upward or downward.

It is notable that even though the variable (h^2) may be said to be a subcategory of (h) in general, the degree to which h-dropping occurs is very different from that observed for (h^1) , thus providing support for the subdivision made in Mees (1983, 1990). Nevertheless, the graphs of the two social classes run parallel to each other. Both exhibit a decrease between 1977 and 1990, and both remain stable between 1990 and 2011, showing almost horizontal lines. Thus the gap between the two social classes remains unchanged. Although one can classify (h^2) as a marker/ stereotype on the basis of the clear stylistic variation, the relatively high use of h-dropping by the MC indicates that it is not stigmatised to the same extent as (h^1) .

8.2.3 The Variable (r)

The variable (r) can be realised in two ways in Cardiff – either as [I] or as [r]. Figure 7 shows the distribution of the non-standard variant, [r], in terms of social class and time. As can be seen from the table, there is a large gap between the WC and the MC in the use of this feature (sharp stratification). What makes it differ considerably from (h^1) and (h^2) is that the use of the non-standard variant increases rather than decreases for the WC informants as they grow older, while diminishing somewhat for the MC. The fluctuations are minor and there is nothing resembling the sharp downward slope seen for h-dropping. For an overview of individual differences, see Table 6.



FIGURE 7. Distribution of [ſ] across social class and time. Interview style.

Distribution of [f] in the Ir	terviev	v style						
	1977			1990			2011		
Middle Class	<u>No. of</u> tokens	पि	<u>%</u>	<u>No. of.</u> tokens	पि	<u>%</u>	<u>No. of</u> tokens	पि	<u>%</u>
Angie	9	0	0%	34	0	0%	32	0	0%
Judy	19	3	16%	35	0	0%	31	0	0%
Alice	23	0	0%	43	0	0%			
Sharon	13	2	15%	34	4	12%			
Stella	19	7	37%	41	4	10%			
MEAN			14%			4%			0%
Working Class									
Gina	16	12	75%	30	25	83%	35	31	89%
Rachel	15	11	73%	37	30	81%	45	39	87%
Michelle	32	28	88%	36	33	92%			
Mandy	6	4	67%	30	24	80%	39	36	92%
Melissa	19	17	89%	31	21	68%			
Heather	8	4	50%	28	20	71%			
MEAN			74%			79%			89%

TABLE 6. Distribution of [r] for individual informants across time.

Table 6 shows that the means for WC and MC and the findings for the individual informants are in agreement. Even so, the 1977 results for the MC show some variation. Two of the informants never use the non-standard variant, while one informant uses it more regularly. However, as in the case of the (h) variables, even the informant who uses it most frequently in the MC does not surpass the WC informant with the lowest use. The WC informants also show individual variation. Nevertheless, no speakers ever use the non-standard variant less than 50 per cent of the time, and most use it considerably more. As noted above, all the WC informants (except for one speaker) increase their use of the non-standard variant as they grow older. In contrast, the MC informants reduce their use of the non-standard variant following the general pattern observed so far.

The increase in the percentage of non-standard forms in the WC indicates that this variant is not a stigmatised feature. It merely functions as an indicator of social class membership. It can be observed by researchers, but it is not generally noticed or disliked by the speech community. In fact, when asked in 2011 what characterises a Cardiff accent, none of the informants mentioned this feature.

9 Conclusion

The variables studied revealed a clear difference between the MC and the WC, the latter using far more non-standard forms than the former. Unlike (r), the (h) variables also exhibited marked stylistic variation, and we can therefore conclude that h-dropping is regarded as a marker/ stereotype while (r) is an indicator in the Cardiff speech community (research question 1).

In contrast to (r), the (h) variables showed a marked downward trend for most of the nonstandard forms between 1977 and 1990, by which time they appear to have stabilised, as no major fluctuations take place between 1990 and 2011. This is in accordance with the pattern expected for social markers/stereotypes. However, the variable (r), our example of an indicator, showed no such downward trend. Rather than decreasing their use of the non-standard variant [r] across time, the WC informants actually slightly increased their use. (The MC showed a slight decrease.) Thus although some variables may be obvious to professional researchers and perhaps to people outside the speech community, they are not always known or recognised by people living inside the community (research question 2). It could perhaps be speculated that an explanation for the low figures for h-dropping in the RPS could be that the orthography would have reminded the informants to pronounce /h/ whereas the standard variant of /r/ cannot be derived from the spelling. However, this does not explain the large difference between (h¹) and (h²), and thus the role played by orthography should not be overstated.

Like Macaulay (1977, 58–59), we also looked beyond the group means to the rank ordering of the individuals. The most striking result is that in not a single instance did the WC informants, even the most ambitious, increase their usage of standard variants to such an extent that they match the usage of MC speakers (research question 3).

We are acutely aware that the sample studied was very small, particularly the 2011 sub-sample. However, if the findings were corroborated using a larger population, we believe the following five conclusions could be drawn.

1) The variables do indeed manifest different degrees of social awareness, and as such Labov's distinction between indicators vs. markers/stereotypes is clearly valid.

2) Indicators exhibit relative stability over time whilst markers/stereotypes are subject to agegraded variation. The speakers feel little or no pressure to change their tap realisations of /r/ to post-alveolar approximants as the non-standard variant is not stigmatised. The opposite holds true for h-dropping. 3) Features appear to remain constant between early and mid-adulthood. The realisations of the variables changed very little after 1990 when the informants were in their early twenties. Thus we find support for the claim that "by late adolescence ... an individual's linguistic system is thought to stabilize" (Tagliamonte 2012, 45); see also Sankoff and Blondeau (2007, 577).

4) The WC speakers who had moved up the social scale (and possibly even entered into the middle class) did not appear to achieve values for standard variants which were as high as those of the lowest MC speakers who were born into that class. If our results can be extended to larger populations, this would imply that it is difficult to fundamentally alter speech patterns established in childhood later in life.

5) The results support the decision to subdivide the variable (h) into lexical and grammatical words. H-dropping is clearly more stigmatised in the former than in the latter.

Future studies will have to decide to what extent the above conclusions are robust and continue into late adulthood, but all in all, this real time panel study has yet again, as so many earlier studies, underlined the systematic nature of linguistic variation.

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Appendix A

Overview of the three indices used to calculate social class, and the points afforded to the categories under each.

Occupation (O)	Points
Professional workers, employers and managers	5
Other non-manual workers	4
Foremen, skilled manual workers, own account workers	3
Personal service, semi-skilled and agricultural workers	2
Unskilled workers	1
Education (E)	Points
Some university or college education	5
A-level or equivalent	4
O-levels or equivalent	3
CSE or equivalent	2
Finished school at 15+	1
Locality (L)	Points
Whitchurch	8
Llanishen	7
Roath	6
Canton/Llanrumney	5
Rumney	4
Splott	3
Adamsdown	2
Ely	1

Appendix B

Overview of the social class index scores for each informant (O = occupation, E = Education, L = Locality)

	1977				1990				2011				
Middle Class	0 x 2	E x 1	L x 0.5	Mean	O x 2	E x 1	L x 0.5	Mean	0 x 2	E x 1	L x 0.5	Mean	Grand mean
Angie	10		3.5	6.8	10	5		7.5	10	5		8	7.4
Judy	10		2	9	10	5		7.5	10	5		8	7.2
Alice	10		4	7	8	4	4	5.3					6.2
Sharon	10		4	7	8	4	4	5.3					6.2
Stella	8		2.5	5.3	10	5	3	6.0					5.7
Working Class													
Gina	6		1.5	3.8	8	3	1.5	4.2	8	5	1.5	4.8	4.3
Rachel	4		1.5	2.8	6	5	1.5	4.2	8	5	1.5	4.8	3.9
Michelle	6		0,5	3.3	4	2	0.5	2.2					2.8
Mandy	4		1.5	2.8	2	3	1.5	2.2	4	3	1.5	2.8	2.6
Melissa	2		1.5	1.8	5	3	0.5	2.8					2.3
Heather	4		0.5	2.3	4	1	0.5	1.8					2.1