Recent research has demonstrated change in progress in the high back vowels in several varieties of English (e.g. Standard Southern British English (SSBE), Harrington 2007; American English, Labov et al 2006), specifically fronting towards /i/ in the acoustic vowel space. In SSBE, real-time data show that the change has been taking place over the last fifty years (Harrington 2007). The situation for Scottish English seems to be different. Particularly in the vernacular variety, /u/ (the single lexical set BOOT, corresponding to GOOSE/FOOT) has been reported as fronted and/or central in the vowel space from auditory accounts since before WWII (e.g. McAllister 1938, Macaulay 1977). Recent investigation of Scottish English also suggests that /u/ is fronted and lowered (Scobbie et al forthcoming). The intriguing question is whether these synchronic descriptions of a fronted /u/ are also the result of genuine shifts for this vowel that can be documented in real time, i.e. whether there has also been any change in the acoustic realization of the Scottish English vowel over the past 30 years.

Here we present results from a new study of real-time change in Glaswegian vernacular. The corpus consists of existing sociolinguistic and oral history recordings from young, middle, and old, male and female, speakers recorded over four decades, from the 1970s to the 2000s. Here we present apparent- and real-time data from a sample of young, middle-aged and elderly speakers recorded in the 1970s and 2000s. The recordings from 2000s consist of spontaneous conversations from self-selected pairs of speakers. Those from the 1970s are from sociolinguistic interviews between fieldworker and informant. All possible tokens of /i/, /u/, and /a/ were extracted for the speakers sampled. Dynamic measures of the first three formants were taken from the central portion of the vowel and normalized by taking the log of Bark-transformed measures (Harrington and Cassidy 1999).

The results confirm the early auditory reports of front realizations, in the earlier recordings. But they also suggest a different trajectory in real-time, since /u/ is now retracting. However the data themselves raise challenges for formant measures. Securely identifying F1 and F2 for /u/ is not always straightforward across the sample. It is even more difficult to establish F3 which reflects possible differences in lip-rounding. This raises the question as to whether we can characterize acoustic variation and change in /u/, but without measuring formant values.

We conclude by exploring a different kind of spectral analysis currently being developed by Harrington et al (2012). A mel-scaled spectrum (0-4kHz) is taken at the midpoint of the vowel, and measures reflecting properties of the overall sampled spectrum (spectral slope and curvature) are obtained by applying discrete cosine transformation. Harrington et al found good separation between high back and front rounded lax vowels in German, even in prosodically weak positions We compare Bark-transformed representations of the /i/- /u/- /a/ relationships with those shown in spectral slope and curvature. We discuss the limitations, advantages and potential of this alternative approach for sociolinguistic investigations of real-time change in vowels.