

A Dialogue Act Analysis of Rises in Australian English Map Task Dialogues

Janet Fletcher, Roger Wales*, Lesley Stirling, & Ilana Mushin**

Department of Linguistics and Applied Linguistics, University of Melbourne

* Faculty of Humanities and Social Sciences, La Trobe University

**Department of Linguistics, University of Sydney

janetf@unimelb.edu.au

Abstract

Uptalk or rising intonation is a distinctive feature of Australian English. The distribution and discourse functions of simple and complex rising tunes were examined in a corpus of Australian English map task dialogues. Dialogue acts (classified using DAMSL) corresponding to information requests were consistently realized as high-onset high rises whereas low-onset high rises corresponded to a wider range of forward-looking communicative functions, such as statements and action directives, but were rarely associated with information requests. Two kinds of fall-rise tunes were also observed: low-range and high-range fall-rise. The high-range fall-rises shared similar dialogue functions with statement high rises and were almost never associated with yes/no questions. Low-range fall-rises were associated with the same kinds of functions as simple low rises, such as acknowledgements and answers, i.e. backward-looking dialogue acts. The Australian English statement high rise (usually realized as a L* H-H% tune) is clearly not the same tune as a yes-no question rise in this variety, and is used, along with the high-range fall-rise, as a co-operative device in the map task.

1. Introduction

Until relatively recently, it has been assumed that the major intonational tunes of Australian English are more or less identical to Standard Southern British English or General American English, and that dialectal differences are more to do with differences in tune use. For example, statements in Australian English are sometimes realized with a simple terminal high rise [1]. This phenomenon of uptalk has also been reported for New Zealand English [2] and it has been noted recently in some urban varieties of Southern British English (SSBE)[3]. The use of the statement high-rise or high rising terminal in Australian English is thought to be an example of a semantic difference between this dialect and SSBE, for example [4]. In other words, it is often claimed that an identical tune, i.e. a high rise, is used in Australian English for both statements and yes/no questions in certain pragmatic contexts, whereas a high rise is still largely only associated with yes/no questions in most southern varieties of British English.

A recent study of Australian English intonation [5] showed that statement high rises are not phonetically identical to rises associated with yes/no questions. This suggests that realizational variants of the simple high rise in one variety, for example SSBE, may in fact constitute two functional tune-types in Australian English. The

true high rise, which starts relatively high in a speaker's range and continues to rise to the end of the intonational phrase, is functionally and phonetically different from the high rise which starts relatively low in a speaker's range and rises to a level comparable to the true high rise. The first variant is associated with yes/no questions whereas the second variant is realized with statements. Figure 1 shows a schematized representation of these two rises.

Complex rises in Australian English may also represent another potential source of dialectal difference with SSBE or General American English. Impressionistic analysis suggests that fall-rise tunes have at least two variants in Australian English. These two variants are schematized in Figure 2. One variant is identical to Tone 2 in Halliday's scheme [6]. The tune starts relatively high, then falls and rises again to around mid-level in a speaker's range. The other variant is characterized by a final rise which is phonetically identical to the simple high rise with low pitch onset, illustrated in Figure 1. The final part of the tune terminates relatively high in a speaker's range, extending often well beyond the pitch level at the beginning of the tune. The same phonetic variation is not observed among rise-fall-rise tunes however, i.e. those complex rises which have a strong lead tone.

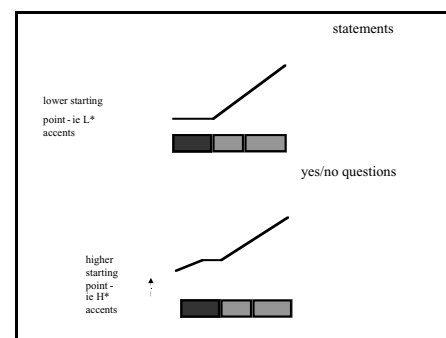


Figure 1. Schematized representation of the two types of simple high rise found in General Australian English.

While a relatively straightforward semantic classification of the two simple high rises illustrated in Figure 1 may be possible for Australian English, i.e. low onset high rises conclude statements whereas high onset high rises conclude questions, the fall-rise tune presents more of a challenge. Australian English is not unique in this respect. Grice et al.[7] discuss the problematic issue of

question fall-rises —the tune described as Tone 2 by Halliday, versus the implicational fall-rise, Halliday's Tone 4 in SSBE. It is our impression that the former is almost never used with questions and it is unclear whether the implicational fall-rise necessarily always has to have a lead tone in Australian English. Nor do the two fall-rises illustrated in Figure 2 look like the American English fall-rises (with strong lead tones) discussed at length by Ward and Hirschberg[8].

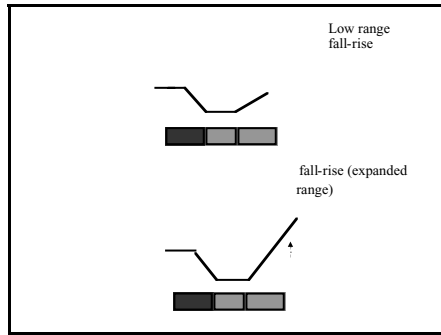


Figure 2: Schematized representation of two types of fall-rise tune commonly observed in General Australian English.

The kinds of functions that have been attributed to fall-rises in SSBE include a wide range of attitudinal and semantic nuances like incompleteness, up-in-the-airness, doubtful, encouraging, forcefully reproachful, and continuative [6]. Other interpretations include polite softening [4] or it is claimed that the fall-rise emphasises the cooperative nature of interaction [8]. It has widely been assumed that these interpretations also hold for Australian English. As far as we can tell, however, little attempt has been made to analyse the various rises of Australian English within the context of the system of intonation for this variety. The main aim of the current study, therefore, was to examine the functions of a range of rises observed in Australian English dialogues, including the two fall-rises shown in Figure 2, using a dialogue act analysis protocol used in an earlier study[10].

2. Method and Materials

2.1. The ANDOSL Map Task

Eight dialogues from the Australian Map Task section of the Australian National Database (ANDOSL) [9] were formed the corpus for this study. The dialogues were chosen randomly and the speakers all belonged to the general Australian English dialectal grouping. The dialogues were between 485.93 sec and 810.24 sec in duration.

2.2. Word and prosodic labeling

The acoustic waveform files and F0 signals for the eight dialogues were annotated according to ToBI (Tones and Break Indices) conventions that have been adapted for Australian English [5]. Word boundaries were identified and orthographically labelled. Major pitch movements corresponding to pitch accents and intermediate and intonational phrase boundaries were labelled using the F0 signal and auditory analysis. The inventory of tones used to transcribe Australian English intonation in this study is

summarised in Table 1. The tunes of interest can be summarized as follows together with their tonal transcription: high onset high rises - H* H-H% or L+H* H-H%, low onset high rises - L* H-H%, low rises —L*L-H%, fall-rises (low range) H*L-H%, fall-rises (high or expanded range) H*+L H-H%, and rise fall rise tunes L*+HL-H%. The dialogues were also coded for turns. A turn was defined as any stretch of talk. This was done in order to see whether certain rises tended to occur turn-finally or turn-medially.

2.3 Micro-level discourse coding: dialogue acts

The coding for dialogue acts used in this study was based on the modified DRI/DAMSL scheme [10]. The dialogue act coding system adopted in that study, SWBD-DAMSL [11], was used because it permits a relatively fine-grained analysis of different dialogue acts beyond the informal semantic categorization of the high rising tune that has been carried out in earlier studies of Australian English.

Table 1: The tonal categories with general pitch description from AuE ToBI (Australian English Tones and Break Indices)

Intonation Events	Pitch description	AuE ToBI
Pitch Accents	Simple high	H*
	Simple low	L*
	Rising	L+H*
	Scooped	L*+H
	Falling	H*+L
	Downstepped high	!H*
	Downstepped	
	Rising	L+!H*
	Downstepped	
	scooped	L*+!H
	Downstepped falling	
	Downstepped	!H*+L
	High from preceding	
	H tone	H+!H*
Phrase Accents	High	H-
	Low	L-
	Downstepped High - mid	!H-
Boundary Tones	High	H%
	Low	L%

Table 2 summarizes some of the main forward and backward communicative functions that the dialogues were coded for. Discourse coding was performed independently of intonational and prosodic labeling. The different rising tunes were categorized according to dialogue act, and Chi-square analyses performed.

Table 2: Some of the major SWBD/DAMSL codes for forward and backward communicative functions

Forward-communicative-functions	Backward-communicative-functions
<i>Statement</i>	<i>Agreement</i>
<i>sd</i>	<i>ad</i>
(information requests)	<i>ar</i>
<i>qy</i>	<i>Understanding</i>
<i>qw</i>	<i>b</i>
(action-directives)	<i>bk</i>
<i>ad</i>	<i>Answer</i>
	<i>ny,nn</i>

3. Results

Figures 3(a) and (b) show the distribution of simple and complex rises according to turn position for the entire corpus. Figures 4 (a) and (b) show the distribution of rises according to DAMSL dialogue act codes. There was no significant effect of gender on rise distribution ($p>0.05$) so the data were pooled across speakers.

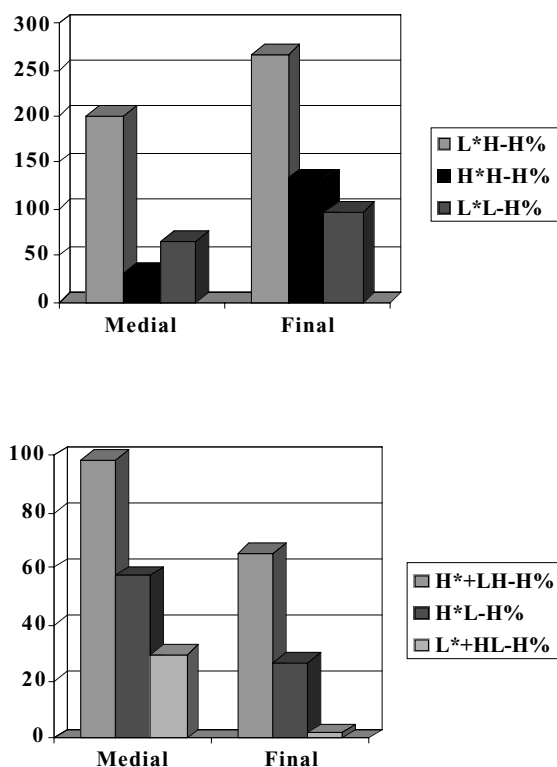


Figure 3(a) and (b): The number of simple and complex rises classified according to whether they are turn-medial or turn-final.

Simple high rises far outnumbered low rises in this corpus. The majority of rises also occurred turn-finally ($\chi^2 = 44.43$; $p<0.001$). The differences were most apparent for high-onset high rises with a very small number occurring turn-medially compared to the other rises. With respect to complex rises, turn position was also a significant factor but in the opposite direction ($\chi^2=13.67$, $p<0.01$). More complex rises were realized turn-medially than turn-finally. Notably, the expanded-range rises far outnumbered fall-rises without a terminal high rise, and rise-fall-rises.

The three different simple rises analyzed in this study did not conclude the same types of dialogue acts ($\chi^2=128.92$, $p\text{-value}<0.0001$). For example, high-onset high rises were almost always associated with information requests (forward-looking functions). Low-onset high rises were rarely associated with information requests, but were mainly associated with action directives and statement directives, especially when speakers were performing the instruction giver role. A high number of low-onset high rises also concluded backward communicative functions, usually when the speaker was in the instruction follower role. Low rises concluded similar kinds of dialogue acts. The dialogue acts included acknowledgement, acceptance

and agreement acts. Low rises never occurred with information requests.

With respect to complex rises, there was also a significant effect of dialogue act identity on rise distribution ($\chi^2= 7.44$, $p<0.01$). Most high-range fall-rises were associated with forward-looking communicative functions. As with the low-onset high rises, most of the high range fall-rises occurred with sd, statement directives and ad action directive dialogue acts, with only two fall-rises in the entire corpus being associated with information requests. A similar pattern was observed for rise-fall-rises. By contrast, more or less equal numbers of low-range fall rises were used for forward-looking or backward-looking functions. Low-range fall-rises never concluded information requests in this corpus, but tended to occur with the same kinds of dialogue acts as the simple low rises.

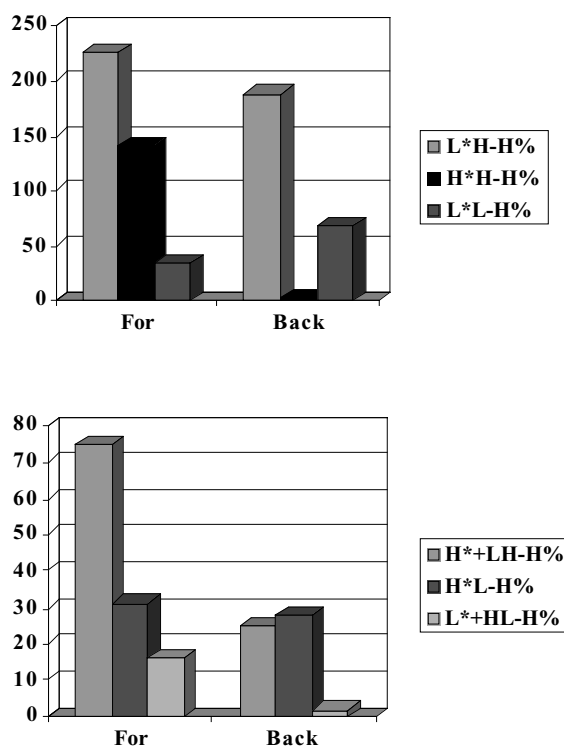


Figure 4 (a) and (b): Number of rises (simple and complex) that conclude forward-communicative or backward-communicative dialogue acts.

4. Discussion

It is clear from the results presented above that the phenomenon of uptalk goes beyond the simple high rise in Australian English, which has been the general assumption in earlier studies [1]. The high-range fall-rise and the low-onset and high-onset high rises were frequently occurring tune-types in this corpus. The eight General Australian English speakers in this study produced far more simple and complex high-range rises than low rises, although all speakers produced all types of rise. That is to say, it was not the case that speakers only produced low-range or high-range fall-rises. An independent dialogue act analysis showed that the most frequent simple rise — the low-onset high rise (L* H-H%) -

was associated with statements, and action directives or instructions. Most of these rises occurred in turn-final position although a significant number were also turn-medial. Those in turn-final position tended to be associated with acknowledgments, or answers. By contrast, high-onset high rises were nearly all associated with tag questions and information requests, confirming the findings of earlier studies (e.g. [5]). Not surprisingly, the majority of high-onset high rises were also turn-final as information requests were generally followed by a response from the other map task participant. High-range fall-rises were associated with the same kinds of forward-communicative functions as low-onset high rises, namely statements and instructions (action directives). By contrast, the high-range complex rises were more often realized turn-medially, and appeared to function as floor-holding devices. Low range fall-rises tended to conclude the same types of dialogue acts as low rises, i.e. agreements, answers and so forth.

The results of this study present some paradoxes for conventional interpretations of rising intonation in English. For example, it may appear odd that low-onset high rises occurred with acknowledgements, answers, and agreements, on the one hand, and statements and instructions on the other. One likely answer resides with the nature of the map task itself. It is deliberately designed to elicit a particular kind of interaction. An important element of the design is that the maps at the core of the task are not matching, presenting a context of uncertainty. In other words, it is expected that there will be a lot of information requests as well as answers that might signal misunderstanding or speaker uncertainty. Many intonation researchers ([3,4,8]) are united in their claim that rises share a general pragmatic goal in performing a cooperative function in the discourse of spoken English. The use of simple high rises with backward-looking functions like answers and agreements, suggests that the global cooperative function of rising intonation was emphasized in the interactive context of the map dialogues analyzed in this study. It also points to a potential continuative function of the statement high rise, with the task follower often using these high rises to signal that they were expecting further instruction from the task leader.

The dialogue act/fall-rise correspondence was also significant in this respect. In Australian English, as in American English[8], a falling tune can easily be substituted for a normal-range fall-rise tune (or as it turns out, for a high-range fall-rise in Australian English), but the former does not imply uncertainty, one of the traditional attitudinal functions of the fall-rise in a number of English varieties. This analysis certainly sits reasonably well with the use of low-range and high-range fall-rises with answers and other kinds of responses by speakers in these Australian English dialogues. In other words, rises were used here perhaps to indicate or imply uncertainty. However, we are not sure whether the large number of high-range fall-rises used with instructions or statements in our corpus reflect speaker uncertainty or at least the same degree or scale of speaker uncertainty that response acts might represent in the map task context. As mentioned, many high-range fall-rises occurred turn-medially (as with many low-onset high-rises), and terminated dialogue acts that were representative of a range of forward-looking communicative dialogue acts that one would not necessarily expect to be turn-final (e.g. explanations, expanded instructions). If anything, the

low-range fall-rises in this study functioned more like fall-rises observed in other varieties, than the high-range fall-rises. In the set of map tasks analyzed in this study, the high-range fall-rise did not therefore necessarily always indicate speaker uncertainty or if it did, it was more likely to indicate Ward and Hirschberg's [8], uncertainty without uncertainty, or Ladd's [4] polite softening. Whatever the interpretation, it is apparent that the rises of Australian English are more complex than has previously been acknowledged. It is apparent that for the two phonetically distinct fall-rises of this variety, the semantic nuances are less clear-cut than for the high and low onset high rise.

5. References

- [1] Guy, G.; Vonwiller, J., 1989. The High Rise Tones in *Australian English*. Australian English. P. Collins; D.Blair (eds.) St Lucia :UQP
- [2] Cruttenden, A., 1997. *Intonation*. Cambridge: CUP.
- [3] Warren, P.; Britain, D., 2000. Intonation and prosody in New Zealand English. In *New Zealand English*, A.Bell; K. Kuiper (eds.) Wellington: Victoria University Press, 146-172.
- [4] Ladd, D.R., 1996. *Intonational Phonology*. Cambridge: CUP.
- [5] Fletcher, J.; Harrington, J., 2001. High rising terminals and fall-rises in Australian English. *Phonetica* 58(4), 215-229.
- [6] Halliday, M.A.K., 1970. *A course in English intonation*. Oxford: OUP.
- [7] Grice, M.; Arvaniti, A.; Ladd, D.R., 2000. On the place of phrase accents in intonational phonology. *Phonology* 17, 145-187.
- [8] Ward, G.; Hirschberg, J. 1985. Implicating uncertainty: the pragmatics of fall-rise intonation. *Language* 61, 747-776.
- [9] Mllar, B.; Vonwiller, J.; Harrington, J.; Dermody, P., 1994. The Australian national database of spoken language. *ICASSP-94*, 197-200.
- [10] Stirling, L.; Fletcher, J.; Mushin, I.; Wales, R. 2001. Representational issues in annotation using the Australian map task corpus to relate prosody and discourse structure. *Speech Communication* 13, 113-134.
- [11] Jurafsky, D.; Schriber, E.; Biasca, D., 1997. Switchboard SWBD-DAMSL Shallow-Discourse-Function-Annotation Coders Manual, Draft 13. *Technical Report TR 97-02, Institute of Cognitive Science, University of Colorado at Boulder*.