

ACQUISITION OF LISTING INTONATION IN ENGLISH CHILDREN

Louise H. Coward

Department of Linguistics, University of Manchester, UK

ABSTRACT

This paper examines the intonation of lists (enumerations) in two British children at ages 2;0.3 and 2;4.27. The patterns found are compared to standard reports in the adult intonation literature for British English. Theoretical proposals are then advanced as to how such patterns are constructed and employed in both child and adult language.

INTRODUCTION

This research forms part of a doctoral study examining functions of intonation in the speech of five English children between 1;10.3 and 2;8.14. Data were recorded naturalistically in the children's homes with at least one parent and one researcher present (recordings and orthographic transcriptions were kindly supplied by Dr. E. Lieven). Intonation was transcribed auditorily by the present author by means of an interlinear tonetic notation (instrumental analysis was attempted but proved impractical due to recording conditions).

This paper specifically considers the intonation of counting sequences (a type of listing activity) produced by two of the subjects of the larger study. The author is aware of only one published mention (in passing) of listing intonation in the acquisition literature [1] but there are a number of references to lists or enumerations, albeit usually brief, in standard accounts of adult British English, and it will be helpful to consider some of these first.

ADULT LISTING PATTERNS

It is common in the literature to make a distinction between *incomplete* and *complete* lists, in this paper hereafter referred to as *open vs. closed* lists. Crystal describes this as "the distinction between a limited or an unspecified number of alternatives" [2]; where there is a fixed number of items, he gives the pattern as rising nuclei on prefinal items with a falling nucleus on the final item as in his following example (here, rele-

vant pitch accents are shown schematically immediately prior to the accented syllable):

(1) Would you like gin or whisky or tea?

This is in contrast to a realisation with a final rise, where the number of possible items in the list is not limited to the three actually given, thus:

(2) Would you like gin or whisky or tea?

Both patterns are commonly given in the literature, but a variety of other patterns are also reported. (3) below represents a summary of the patterns described by Crystal [2], O'Connor & Arnold [3], Halliday [4], Kingdon [5], Couper-Kuhlen [6] and Schubiger [7].

(3)

(a) *Closed Listing Patterns (Adults)*

(i) rise+rise+...rise_n+fall

(ii) rise+rise+...rise_n+fall-rise

(iii) rise+rise+...rise_n+rise-fall-rise

(iv) fall-rise+fall-rise+...fall-rise_n+rise-fall

(v) rise-fall-rise+r-f-r+...r-f-r_n+rise-fall

(vi) level+level+...level_n+fall

(vii) level+level+...level_n+fall-rise

(viii) fall+fall+...fall_n+fall

(ix) fall+...fall_n+rise+fall

(b) *Open Listing Patterns (Adults)*

(i) rise+rise+...rise_n+rise

(ii) fall+fall+...fall_n+fall

Working on the assumption that these patterns give an accurate account of adult British English listing intonation, we can make the following generalisations. A *closed listing pattern* must finish on a fall, or in certain cases on a complex rise (fall-rise or rise-fall-rise); it must not finish on a simple rise. Prefinal tones are generally of a uniform type and will typically be rises (whether simple or complex) or levels (which we will treat as a subtype of rise, following Cruttenden [8]); exceptions are where the entire list is realised on a string of simple falls, or where only the penultimate item bears a rise, flanked by simple falls on all other items. An *open listing pattern* will have uniform tones throughout (final and prefinal) and will typically involve either simple rises or simple falls, the simple fall sequence thus being ambiguous between the two categories.

It should be observed, however, that the remainder of this paper will be primarily concerned with *counting sequences*, and whilst it seems highly reasonable to treat these as a form of listing activity (cf. [3] pp.58-9), intuitively the author feels that Kingdon's patterns ending in a fall-rise or rise-fall-rise (i.e. (3a ii, iii and vii)) would only be expected to be appropriate where some sort of *correction* of a previous miscount is involved. Leaving these three patterns aside produces a neater generalisation about the remaining closed listing patterns: they all end in a variety of fall (for the grouping of nuclear contours into falls and rises according to final pitch movement, see *inter alia* [8]).

The schematic overview in (3) above masks the fact that these adult listing patterns can be considered in two ways: as *compositional* sequences of concatenated nuclei; or as *holistic* contours. Both views are implicit in the literature, although rarely elaborated. O'Connor & Arnold [3] and Crystal [2] imply the compositional view by inserting tone unit boundaries after each item in the enumeration. Halliday [4], Kingdon [5], Schubiger [7] and (following Schubiger) Couper-Kuhlen [6] suggest the holistic view for some of the closed listing patterns. Halliday does this notationally by treating the prefinal pitch

accents as constituting a listing pretonic segment, with the whole pattern as a single tone unit; likewise Kingdon [5] states that enumerations form "single sense groups" (all his examples are *closed*). Schubiger [7] and Couper-Kuhlen [6] are most explicit of all, arguing that the patterns in (3a i) and (3a ix) are planned as a unit from the start, whereas the pattern in (3a viii) is planned item by item, and "each might be the last." [7]. Virtually nothing is said in the literature, however, about the planning of *open* listing patterns, with the exception of the use of compositional notation in Crystal [2] and O'Connor & Arnold [3]. Nonetheless the use of rising tones to signal *continuity* is frequently reported in adult intonation literature (e.g. [3], [8], [11]), and this would seem to suggest that rises within both open and closed lists are introduced compositionally and not as part of an overall holistic pattern. We shall return to this holistic vs. compositional hypothesis and to the question of continuity later in the paper.

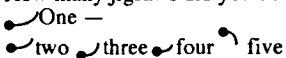
CHILD LISTING PATTERNS

We now turn to an examination of some of the counting sequences occurring in the child language data for this study. Examples (4), (5) and (6) below were produced by child AT at age 2;0.3 (in all excerpts shown here, M designates the child's mother and C the child). Here we see three counting sequences produced by child AT; two (those in (4) and (6)) are elicited by a prompt from AT's mother; that in (5) however is a spontaneous production. At first glance, all three patterns look very adult-like, and on the basis of the adult patterns given in (3a & b) we can hypothesise that (4) contains a closed list (pattern (3a i)) whilst (5) and (6) contain open lists (pattern (3b i)). In view of this hypothesis, let us now consider these examples more closely. In (4), we know that there are four jigsaws to be counted. M prompts C to start counting, and C counts to five. Whilst the number is inaccurate, the decision to realise the sequence on a series of prefinal rises plus a final fall is appropriate, since the situation involves a specific limited set of items. It is clear that this is not a case of imitation, despite M's

prompt, since at the lexical level different numbers are inserted by C and at the prosodic level it is her own decision to employ the final fall. What we do not know here, unfortunately (due to insufficient contextual information), is whether C is associating each number with a visible referent or whether she is uttering the counting sequence in abstract. More will be said on this point later.

(4)

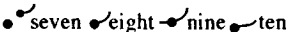
M: How many jigsaws did you do?

C: 

M: No, you only did four, didn't you?


(5)

M: Are you going to put all these bits in?
You've got to count them. We need twelve, don't we?

C: 

M: Eleven. ... Let's have a look: two — four, six ...

(6)

M: We need four of these bits —
so 

C: 

M: ... We'll do that one again before we put it away, shall we?

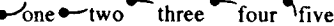
In (5), we know that there are twelve items to be counted, and since C stops her sequence at ten, the final rise may be an appropriate indication that the list is unfinished (sadly, again, we do not know whether each number is being associated with a referent here). However, if we consider the similar case in (6), we find that C is in fact not making the open-closed distinction consistently: in this case we know that there are four items to count, and whilst C counts to four, the fourth and final item receives a rise, which makes this an inappropriate use of an open listing pattern on a closed list. So we can conclude here that child AH has mastered the intonational *form* of counting sequences but not yet their *function*.

We can now look briefly at data from one other child. Examples (7) and (8) are from child AH at age 2;4.27. Both these examples are unelicited (and probably uttered referent-free):

(7)

C: 

(8)

C: 

(7) seems to be an archetypal closed listing pattern as in (3a i), and we might wish to conclude from this that child AH has mastered at least the form of this closed listing pattern. However, the pattern in (8) deviates to some extent from the adult forms; it introduces high shallow falls in penultimate and antepenultimate positions. This may nonetheless not be too far from adult realisations: it is sometimes claimed that overall high pitch and suspension above the baseline are functionally equivalent to an actual rising movement (e.g. [9]). There may also be related regional dialectal considerations in the case of this particular child (Glaswegian and Mancunian influences; cf. [10]). The final fall in these examples is however not subject to variation, so this child is probably well on the way to mastering the formal characteristics of the closed list.

THEORETICAL DISCUSSION

The majority of the listing patterns considered in this paper and in the literature involve rising tones in prefinal position. It is tempting to view the use of rises in listing sequences as fulfilling a continuity function, whether in the case of prefinal rises which are then indeed followed by further material, or in the case of final rises in open lists, where there is the *potential* for further material to follow. Indeed, this interpretation of adult listing intonation is implied by O'Connor & Arnold [3], and suggests a compositional view of listing patterns.

However, in view of the acquisitional data, the issue seems more complex than this. We have already made a distinction between acquisition of the *form* of listing patterns and acquisition of their *function* (i.e. appropriate choice of variant). In the data we have considered, the children do not seem to be constructing a series of continuity rises one by one and indicating completion with a final fall; rather, they seem to have a holistic pattern, or *template*, in mind for the sequence as a whole, for

example: rise+rise+...rise_n+fall, into which varying lexical material can be inserted in varying amounts, but which must retain certain intonational characteristics across all instantiations.

The question then arises: what are adults doing when they produce listing sequences? Are they constructing these unit by unit on the basis of continuity rises? It seems perfectly possible that, adults too have a 'stretchable' template in mind in advance for the entire sequence, and need only really consider the question of continuity with regard to the final item; this decision itself might be made in advance in selecting a closed rather than an open template before the sequence is started, or it might be made towards the end of the production of the sequence. In the latter case, either two templates, an open one and its closed equivalent, would have to be available in parallel; or else the first part of the pattern only would be holistically planned, and the last one or two items added semi-compositionally. This template hypothesis does not deny that the use of rises in listing patterns *originated* (historically) in a genuine continuity function, but such patterns seem so ingrained as speech habits that it seems more likely that they are stored and activated as prefabricated templates than that they are built, as it were, brick by brick each time, even where they *are* being used functionally. It is also important to observe that even adults treat counting sequences in two ways: as a series of labels applied to successive related referents (a *functional* use), and as an abstract prememorised recitation sequence (a predominantly *formal* use — as in response to: "Close your eyes and count to ten"). Although it is the abstract recitation form which a child acquires first, the fact of this dual adult usage means that *unlike* in many other cases of early item-learning [12], the child must still retain and employ the unanalysed recitation sequence even *after* he/she has learnt the functional use of its analysed components. It would thus seem more reasonable that as an adult and even in functional contexts a speaker bases the form of his/her counting sequences on the analogy with the prememorised sequence rather than

constructing it from scratch on each occasion.

ACKNOWLEDGEMENTS

The author expresses gratitude to the Humanities Research Board of the British Academy who funded this research and this paper (award BA92/1291), to Dr. E. Lieven for supplying data, and to Dr. A. Cruttenden for general supervision and specific advice.

REFERENCES

- [1] Carlson, P. & M. Anisfeld (1969), "Some observations on the linguistic competence of a two-year-old child," *Child Development*, vol. 40, pp. 569-75.
- [2] Crystal, D. (1969), *Prosodic systems and intonation in English*, Cambridge: CUP.
- [3] O'Connor, J.D. & G.F. Arnold (1973), *Intonation of colloquial English*, London: Longman.
- [4] Halliday, M.A.K. (1967), *Intonation and grammar in British English*, The Hague: Mouton.
- [5] Kingdon, R. (1958), *The groundwork of English intonation*, London: Longman.
- [6] Couper-Kuhlen, E. (1986), *An introduction to English prosody*, London: Arnold.
- [7] Schubiger, M. (1958), *English intonation: its form and function*, Tübingen: Niemeyer.
- [8] Cruttenden, A. (1981), "Falls and rises: meanings and universals," *Journal of Linguistics*, vol. 17, pp. 77-91.
- [9] Hirst, D. (1993), Lecture given at the ELSNET Summer School on Prosody held at University College, London, 12-23 July 1993.
- [10] Cruttenden, A. (1994), "Rises in English," in J.W. Lewis (ed.), *Studies in general and English phonetics: Essays in honour of Prof. J.D. O'Connor*, London: Routledge, pp.155-173.
- [11] Crystal, D. (1975), *The English tone of voice: Essays in intonation, prosody and paralanguage*, London: Arnold.
- [12] Cruttenden, A. (1981): "Item-learning and system-learning," *Journal of Psycholinguistic Research*, vol. 10, pp. 79-88.