Phonological Realisations of Formulaic Language

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Abstract: This paper gives an analysis of formulaic language in terms of the link between various categories of formulaicity and their phonological realisations.

Keywords: Formulaic Language; Phonological Realisation; Category of Formulaicity

1. Introduction

Formulaic language (FL), given its frequency of occurrence and prominent position in native-to-native English speech, is well documented in the literature. Various categories and terms are assigned to this linguistic phenomenon, e.g., collocations, chunks, lexical phrase, fixed expressions and idioms. There are also many phonological features, such as precise articulation, speed of delivery, stress, pause and intonation patterns, associated with FL. However, there is no research carried out so far based on real dialogue to demonstrate the link between different categories of FL and their relevant phonological realisations. The considerations given below by the present author are aimed at bridging this gap and adding to the body of knowledge.

2. Dynamic Speech Corpus acquisition

The samples used in the analysis are taken from four dialogues from a small Dynamic Speech Corpus developed by the Dublin Institute of Technology. The dialogues are recorded between friends or family members, therefore naturalness is a key feature. Speakers are native speakers from Ireland and England. Several salient linguistic features, e.g., formulaic sequences (FSs) and their speed of delivery, cross talk, back-channelling, and word-fillers, are revealed in these recordings.

3. 'FS≠FS'

Not all FSs are equal. The same sequence of formulae, depending on different speeds of delivery and intonation patterns, can realise different communicative functions. Tagging one of the audio recordings, there are seventeen sequences of the chunk 'you know' occurring in Speaker A's database, and eighteen in Speaker B's. Comparing these, it is clear that the speed of delivery in two of the samples are impressively faster than the medium articulation speed of 5.3syll/sec, as these two chunks uttered by both speakers are stored in the mind as a unit and uttered unconsciously and automatically to keep the conversation going. At the slower speeds shown in another two samples, however, the chunks take on a more interactive characteristic, displaying more attitudinal features, rather than merely filling the gaps.

Acoustic signal analysis based on pitch contour also shows the relationship between the various functions of FSs and the speed of delivery. The intonation contour with the faster delivery speed of 694syll/min shows a flatter curve than that with the slower speed of 266syll/min. This conforms to the interim finding that a faster rate means fewer or less obvious interactive features, while retaining a suitable intonation pattern. In addition, the intonation contour produced at the faster speed is more intact than the slower one. This suggests that a FS delivered at a faster speed is more preassembled as a coherent unit in the mind than when uttered at a slower speed, and that there is more semantic and emotional engagement in the slower utterance.

Another example of the link between FL and its speed of delivery and pitch contour is based on the analysis of the chunk 'I mean'. All 33 samples in the dialogue are analysed and graphed. It can be seen that, although there are clear deviations in the middle speed range, the trend lines indicate that there seems to be an inverse relationship between speed of

delivery and the pitch range.

Therefore, it seems reasonable to conclude that not all FSs are equal. The potential communicative functions cannot be accurately identified and understood without considering their phonological features, especially speed of delivery and pitch range.
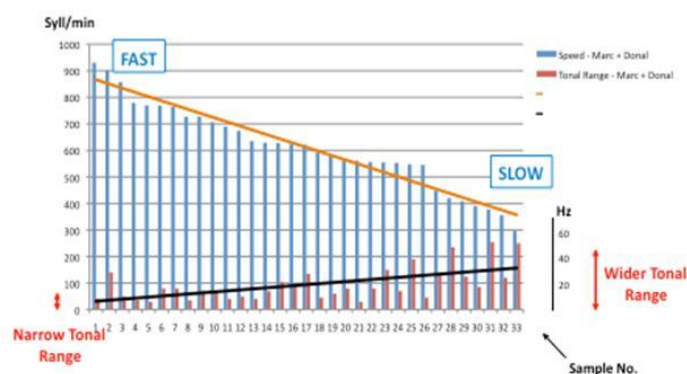

Figure 1: Different realisations of speed and pitch range of FS 'I mean'

4. Categories of FSs and their speed of delivery and pitch range

In order to investigate the phonological realisations of various categories of FL, the analysis of speed of delivery and pitch range is incorporated into the current study. The calculation of speed is done manually with *Speech Analyzer*. The average speed of delivery for Speaker A is 400syll/min, for Speaker B 287syll/min, and for Speaker C 305syll/min. Thus, the medium speed range in the present study is defined between 300-400syll/min. Pitch range analysis is carried out automatically with *PRAAT*. The average pitch range for Speaker A is 74Hz, for Speaker B 72Hz, and for Speaker C 78Hz. The medium pitch range in this analysis is considered to be between 50-100Hz.

4.1 Collocations

The analysis of collocations is based on four FSs. The average speed of delivery is 377syll/min, and the average pitch range is 39Hz. Six out of ten samples are with a medium speed and eight are with a narrow pitch range (below 50Hz). Five out of ten (50%) conform to both parameters. Collocations tend to be short and have a high frequency of co-occurrence, but can be discontinuous. Collocations function as semantic units.

4.2 Semi-fixed frames

Semi-fixed frames refer to templates which include variables. Five samples are chosen. The average speed of delivery is 400syll/min, and the average pitch range is 65Hz. Three out of five samples are within the medium speed range, and four are within a medium pitch range. Three out of five (60%) conform to both parameters. Semi-fixed frames, which tend to be longer, are also semantic units, delivered at a medium rate. However, given that tailor-made elements need emphasis, the pitch range tends to be wider – up to a medium level.

4.3 Idioms

Given that idioms occur relatively infrequently, only two examples are chosen in the data collected. The average speed of delivery is 186syll/min, and the average pitch range is 150Hz. As most of the idioms are opaque expressions, a slow speed of delivery (below 300syll/min) and wide pitch range (above 100Hz) are needed to highlight the metaphorical implications of the expressions. Both samples (100%) conform to these two parameters. Idioms have semantic meaning as well, and tend to be longer.

4.4 Chunks

The analysis of chunks is more complicated. Depending on the different functions they realise, chunks can be defined as unmarked or marked. Unmarked chunks, e.g., back-channelling, characterise most of the chunks produced unconsciously and automatically and are more likely to be used for filling in gaps. Marked chunks, in contrast, tend to show more

engagement and more interactive features in the conversations.

4.4.1 Unmarked chunks

The data of unmarked chunks are based on fifteen samples. The average speed of delivery is 427syll/min, and the average pitch range is 29Hz. Ten out of fifteen are within a fast speed range (over 400syll/min), and all the fifteen samples are within a narrow pitch range. Ten out of fifteen (67%) conform to both parameters.

4.4.2 Marked chunks

Eight samples are chosen for the analysis. Seven of the samples are clearly within the medium pitch range. The situation with the speed parameter is less clear, however. The average speed is 375syll/min, i.e., within a medium speed range. However, not one sample falls within this range. It would therefore seem advisable to separate the samples into a fast group and a slow group.

Five samples are uttered with a slow speed of delivery of an average 267syll/min. The average pitch range is 64Hz. All the five samples are within a slow speed range, four of them are within a medium pitch range. Four out of five (80%) conform to both parameters.

Three samples with a fast speed of delivery are analysed. The average speed is 555syll/min, and the average pitch range is 81Hz. All three samples are within a fast speed range and a medium pitch range. All the samples (100%) conform to both parameters.

In short the phonological realisation of chunks is rather complex. Unmarked chunks normally are of a fast speed of delivery and a narrow pitch range. By contrast, marked chunks are identified as having a medium pitch range, and can be realised at either a slow speed of below 300syll/min, or a fast speed of over 400syll/min. Chunks, characterised by short sequences, high frequency of co-occurrence and not amenable to unpacking, play an important role in FL.

4.4.3 Grammatical paradigms

Grammatical paradigms are grammatical units which tend to be longer, with a relatively frozen grammatical frame plus a variable, depending on various tenses and registers, to structure an utterance and build up an expression. Nine samples are drawn from the data. The average speed of delivery is 694syll/min, and the average pitch range is 46Hz. Eight out of nine samples are within a fast speed range – over 400syll/min or more, which is in line with Cruttenden's analysis of the most common vowel reductions occurring in auxiliary verbs. Five of them are of a narrow pitch range. That is to say, five out of nine samples (56%) conform to both parameters.

5. Results and conclusion

In conclusion, based on the analysis of natural interactive dialogues, some links between different categories of FL and their realisations of relevant phonological characteristics, e.g., speed of delivery and pitch range, are investigated in the present study. A comprehensive tabulation is laid out in Figure 2. This is the investigation the present author aims to add to the study of FL, which is suggested as only a starting point. More data is needed to facilitate the analysis of FL and prosody.

Category		Example	Speed (syll/m)			Pitch Range (Hz)			Function
			0-300	300-400	400+	0-50	50-100	100+	
Collocations		of course		√		√			Semantic
Semi-fixed Frames		on your left hand side		√			√		Semantic
Idioms		from pillar to post	√					√	Semantic
Chunks	Unmarked	I must say / or something			√	√			Interactive
	Marked	I must say	√		√		√		Interactive
Grammatical Paradigms		is going to			√√	√			Grammatical

Figure 2: Towards inclusion of prosody in FS typology

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