

## The role of silence in spoken Maltese: durational and distributional characteristics of pauses and breaks

One defining characteristic of spontaneous speech is the relatively frequent occurrence of silence, at intervals of varying lengths, in the stream of speech. While such silence may be attributed in part to purely physical phenomena related to the processes of breathing and articulation, it is often associated with linguistic function of two main sorts:

- "chunking up" of the stream of speech into different types of phonological units e.g. phonological phrases, intonational phrases, phonological utterances (Nespor & Vogel 1986);
- conveying various communicative functions e.g. the presence of silence can help the listener to comprehend the message; it can serve as a precursor to the listener interrupting to give feedback, make comments or ask questions, or it can also be associated with different linguistic or emotional factors such as syntactic complexity, the marking of emphasis and the expression of anxiety (Kowal et al. 1975; Green 1977; O'Connell & Kowal 1983; Esposito et al. 2007).

Research suggests that silent intervals surface in the process of speech planning and production, allowing the speaker to use various strategies which can contribute to maintaining discourse flow in some way (Goldmar Eisler 1968; Butterworth 1980; Chafe 1987; Esposito et al. 2004; Esposito 2005, 2006).

While there is no doubt of the importance of silence in both prosodic organisation and communicative function, studies on this aspect of the phonetics and phonology of Maltese are limited (but cf. Vella 1995; also Borg's 1977 study on prepausal forms in dialects of Maltese). This study aims to address this lacuna in two ways. First, it attempts to provide empirical evidence for a distinction between two types of silent interval, Pauses and Breaks, made in the annotation of Maltese Map Task dialogue data carried out as part of the project SPAN. Evidence of the validity of this distinction provides grounds for the development of a ToBI-style Break Index system for Maltese. Second, the study examines pausing strategies, focusing on silent intervals rather than filled pauses (for an investigation on filled pauses in Maltese, cf. Vella et al. forthcoming). The analysis takes two forms, looking at the durational patterns and distributional characteristics associated with the two types of silence. To better understand the distributional characteristics of Pauses and Breaks, particular attention is given to the occurrence of these types of silence in the context of the Map Task Target Items.

The data we report on reveal that:

- a) Pauses/Breaks mark prosodic boundaries of different sorts, Pauses being generally longer than Breaks;
- b) Pauses/Breaks have different distributions, factors of relevance including: Change of/Same Speaker, and the presence of Target Items, Backchannels and Filled Pauses.

This research provides evidence for a distinction between two types of silence, Pauses and Breaks, which correspond to boundaries of different types, and is crucial to a better understanding of prosodic structure in Maltese. It also provides the basis for more accurate detection of different types of silence in spoken Maltese and is important for the development of better speech recognition and other human language technologies for Maltese.

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