

# The Role of Cyclic Speech Parameters in the Maintenance of Conversational Interaction: A Review

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Applications of time-series analysis to the parameters of fundamental frequency ( $f_0$ , heard as pitch) and sound pressure levels (SPL, heard as loudness) from spontaneous face to face conversational interactions reveal that cyclic patterns in these parameters often continue across utterances (Buder, 1986, 1991, 1994, July, 1996; Buder & Edrington, 2008; Buder & Eriksson, 1997, 1999; Buder, Plexico, & Parham, 2006, November; Dressler, Buder, & Cannito, in press; Lee, Buder, & Parham, 2007, November). While the general phenomenon can be called “rhythmic continuity” (Couper-Kuhlen, 1993), the continuation of these prosodic cycles across utterances by the same speaker is referred to here as prosodic “coherence,” and their continuation across utterances by the two different conversational partners is called prosodic “synchrony.”

The goal of the presentation is to update and summarize methodological and substantive aspects of these applications. Current methods show promise for the development of quantitative indices of prosodic coherence and synchrony. Substantive findings have accumulated to support a general robustness of these cyclic mechanisms in the temporal coordination of conversational utterances involving conversational partners who are both normal and disordered, familiar and unfamiliar, of either sex, or in different language communities. The cyclic measures have also been investigated in alignment with underlying respiratory behaviors, and in the context of discourse phenomena such as repair. Ongoing research is focusing on speaker sex and familiarity as factors that may affect degrees and specific types of prosodic coherence and synchrony observed in face to face communication. In a broader context, the work can be directly situated within the interdisciplinary framework of “coordination dynamics” (Kelso, 1997).

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