

***Older adults' response to co-operating and conflicting prosody in spoken English garden path sentences: An ERP study***

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An increasing number of psycholinguistic studies provide evidence for the important role of prosodic information in young adults' comprehension of spoken sentences (e.g., 1). One well-documented use of prosody by younger adults is the disambiguation of temporary syntactic ambiguities in garden path sentences, specifically early and late closure ambiguities (e.g., 1; 2) such as the examples below.

Though these sentences are lexically similar until the sixth word, the underlying syntactic structure differs between the sentences. The ambiguity can be resolved either when a disambiguating word is encountered, or through prosodic cues to phrase boundaries. Investigations of older adults' prosodic processing reveal that this population is both sensitive to and reliant on prosody for syntactic disambiguation, but allude to subtle differences in prosodic processing (e.g., 3; 4). Studies suggest that older adults show an increased reliance on prosody as compared to younger adults (e.g., 5; 6). It is not yet clear, however, whether the age-related differences observed thus far truly reflect an increased reliance on prosody or rather reflect differences in prosodic processing as it occurs in real time, because of the limited information provided by off-line behavioural methods. The use of event-related brain potentials (ERPs) is a particularly useful means of investigating prosodic processing because ERPs are highly sensitive to the temporal unfolding of language processing and therefore permit an analysis of the nature of ongoing prosodic processing rather than simply reflecting the ultimate outcome, as do many behavioural responses. ERP investigations of young adults have demonstrated the immediate online use of prosodic information in syntactic parsing (7; 8). Through these studies, the closure positive shift (CPS) has been shown to be the electrophysiological correlate to prosodic phrase boundaries elicited in young adults. Moreover, Pauker et al. (2006) showed that a biphasic wave comprised of both the CPS and the P600 marks the use of prosodic boundaries to resolve syntactic ambiguities. As no ERP examinations of prosodic processing in older adults have been published, it is not clear that older adults show the same neural correlates to prosody and syntactic resolution via prosody as do younger adults.

Our current research examines the cognitive mechanisms of online prosodic processing of early and late closure ambiguities, and their respective ERP correlates, in older adults. A group of right-handed native speakers of English aged 65 to 75 years with no history of neurological, language or hearing impairments and with normal or corrected-to-normal vision were presented with 80 original versions of spoken English sentences (co-operating prosody) as well as 80 cross-spliced versions (conflicting prosody) and were asked to perform an acceptability judgment task. ERP components reflecting (a) prosodic phrasing and (b) resulting conflicts will be discussed with a focus

on their implications for psycholinguistic modeling and future ERP studies in this domain. Prosodic perception abilities of older adults will be assessed, providing insight into age-related neural and language processing changes.

## EXAMPLES

- a. Because her grandmother knitted pullovers / Kathy kept warm in the wintertime.
- b. Because her grandmother knitted / pullovers kept Kathy warm in the wintertime.

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