# Same parenthetical, different prosodic realization: evidence from German

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Parentheticals refer to material that is inserted in the middle of an utterance, such as *He is <u>I think</u> at home*. Their frequent use in spontaneous speech poses challenges to linguistic theory in different areas. An open question for syntacticians is how parentheticals are inserted into the surrounding material. It has long been assumed that parentheticals form their own phrase and thus intonational domain. However, for German, few studies examine prosodic data, and those that do report conflicting results: some studies conclude that parentheticals are always set apart prosodically in some way [1,2], usually with pitch changes, and others have found that parentheticals are often prosodically integrated, and many prosodic features are optional [3].
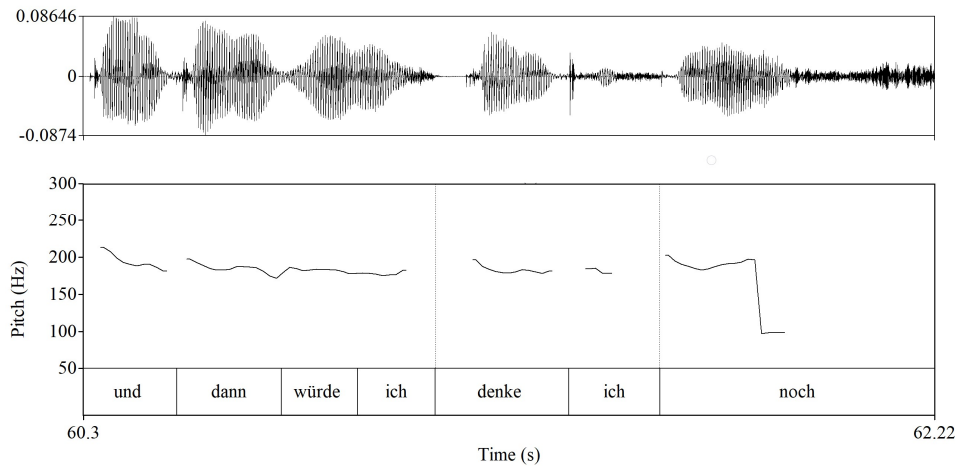
One challenge in previous work is the diverse nature of parentheticals, which can range from full sentences to subject–verb units such as *I believe*; many studies investigated different types of parentheticals. However, [3] found that shorter parentheticals are more likely to be prosodically integrated into surrounding material than longer ones. At the same time, [4] found that even the same short parenthetical can be realized with different prosodic phrasing in Icelandic. To address these contradictions, the current study investigates the prosodic nature of one short parenthetical, *glaube/denke ich* 'I think'. If the length of the parenthetical is decisive for prosodic behavior, characteristics should be similar across the dataset. However, if the same parenthetical is produced with different prosodic characteristics, this would suggest that speakers can choose whether or not to set apart the parenthetical and thus that they may make use of prosodic means to encode certain meanings. To control for possible speaker differences, the dataset includes multiple instances of the same parenthetical produced by the same speaker.

Secondary analysis was performed on a dataset of 180 instances of the parenthetical *glaube/denke ich* 'I think' taken from acoustic and respiratory recordings of 12 adult German speakers (7 female) in a laboratory setting. Spontaneous monologues were elicited via an item-choice task: participants were asked to choose 5 out of 10 items to take to a deserted island and motivate their choice (≈ 2 min./trial; 9 trials/participant). During transcription, the repeated use of the parenthetical 'I think' was noted and inspired the current data-driven analysis due to both the large number of instances and their formal homogeneity, which controls for the length and meaning of the parenthetical and makes it possible to compare the prosodic realization of the same parenthetical between and within speakers. The acoustic analysis software PRAAT [5] was used to visually inspect the pitch contours for pitch jumps and to measure intensity, speech rate and pauses immediately before, during and after the parenthetical, following [1].
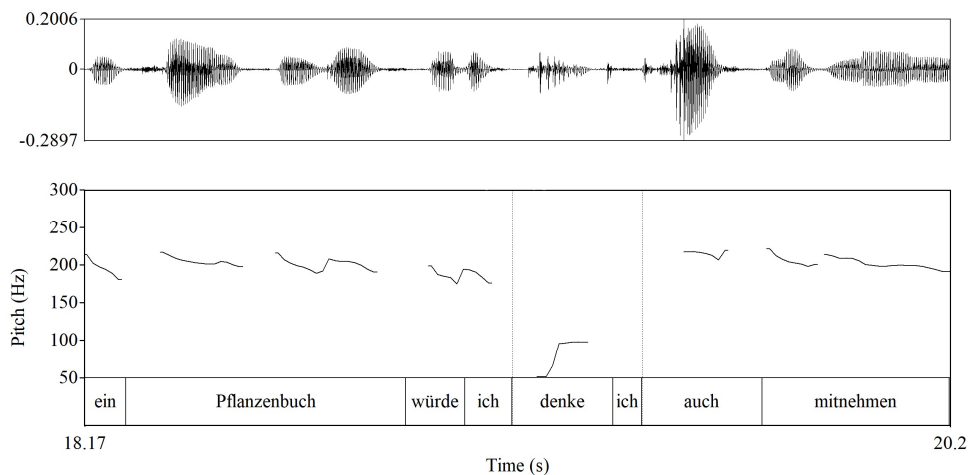
The results to date show that the parenthetical *glaube/denke ich* is indeed realized with different prosodic characteristics across the dataset, also within speakers. For example, figure 1 shows the parenthetical *denke ich* seemingly integrated into the utterance 'and then I would I think still'. However, in another instance in the same trial (fig. 2; 'a book on plants I would I think also take with me'), the speaker prosodically sets off the parenthetical from the surrounding material by realizing it with lower pitch, lower intensity and creaky voice.

The fact that the same parenthetical 'I think' can have different prosodic profiles raises questions about whether a different meaning is being encoded. One striking and perhaps relevant result so far is that 'I think' often follows another subject–verb pair, like 'I would' or 'one can'. Here, the parenthetical could be removed without changing the grammaticality or truth-conditionality of the utterance. It is thus plausible that the parenthetical serves an optional function, such as weakening speaker commitment to the proposition expressed by the verb, similarly to a sentence adverbial, as

proposed by [6]. In this case, the use of different prosodic characteristics could be evidence of cognitive encoding to distinguish shades of meaning.



**Fig.1** Pitch extract with *denke ich* 'I think' integrated in the surrounding material



**Fig.2** Pitch extract with *denke ich* 'I think' set off by lower pitch and intensity

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