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Listening Ahead: Phonological Prediction in Down Syndrome

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Phonological prediction allows listeners to anticipate upcoming words based on partial linguistic input. While this ability is well documented in typically developing populations, its status in individuals with Down syndrome remains underexplored. This study examined phonological prediction in individuals with Down syndrome using eye-tracking paradigm. Participants viewed two images while listening to highly constraining sentences (e.g., “The hen laid its...”). One image corresponded to the target word (egg; huevo in Spanish), whereas the other was either a phonological competitor sharing the same onset (bone; hueso for huevo in Spanish) or an unrelated distractor. Anticipatory processing was examined during a predefined prediction window prior to target onset. Results revealed reliable visual preference for the target after word onset, indicating successful lexical access. Anticipatory looks to the phonological competitor were observed, but these effects were weaker and temporally delayed. Overall, findings indicate phonological prediction is present in Down syndrome but operates with reduced efficiency.