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Audiovisual binding for speech perception in noise and in aging [Recurso electrónico] / Attigodu Chandrashekara Ganesh, Frédéric Berthommier, Jean-Luc Schwartz

Este artículo se encuentra disponible en su edición electrónica. Su acceso electrónico es a través del enlace de 'Acceso al documento'.

References: p. 216-219

Speech perception involves fusion of multiple sensory inputs, but fusion is not automatic, likely depending on several external and internal factors (e.g., attention, noise, age). In this study, we exploited a specific paradigm in which a short audiovisual context made of coherent or incoherent speech material is displayed before an incongruent audiovisual target likely to provide fusion (McGurk & MacDonald, 1976). We confirmed that incoherent context leads to unbinding, that is, a reduction in the amount of fusion. Importantly, adding acoustic noise in the context though not in the target increases fusion. This suggests that listeners systematically evaluate the reliability of their sensory channels and weight them accordingly in the fusion process. We also showed that older participants display more unbinding than younger participants. We discuss the potential consequences concerning people's ability to understand speech in adverse conditions and relate our findings to a "Binding-and-Fusion" model of audiovisual speech perception.

Language learning. -- 2018 (June), v. 68, supp. 1, p. 193-220

1. Audiovisual binding 2. Audiovisual integration 3. McGurk effect 4. Speech perception

2

Beat gestures and syntactic parsing [Recurso electrónico] : an ERP study / Emmanuel Biau, Lauren A. Fromont, Salvador Soto-Faraco

Este artículo se encuentra disponible en su edición electrónica. Su acceso electrónico es a través del enlace de 'Acceso al documento'.

References: p. 122-126

We tested the prosodic hypothesis that the temporal alignment of a speaker's beat gestures in a sentence influences syntactic parsing by driving the listener's attention. Participants chose between two possible interpretations of relative-clause (RC) ambiguous sentences, while their electroencephalogram (EEG) was recorded. We manipulated the alignment of the beat within sentences where auditory prosody was removed. Behavioral performance showed no effect of beat placement on the sentences' interpretation, while event-related potentials (ERPs) revealed a positive shift of the signal in the windows corresponding to N100 and P200 components. Additionally, post hoc analyses of the ERPs time locked to the RC revealed a modulation of the P600 component as a function of gesture. These results suggest that beats modulate early processing of affixes in continuous speech and potentially have a global impact at the level of sentence-parsing components. We speculate that beats must be synergistic with auditory prosody to be fully consequential in behavior.

Language learning. -- 2018 (June), v. 68, supp. 1, p. 102-126

1. Audiovisual speech 2. ERPs 3. Gestures 4. P600 5. Prosody 6. Syntactic parsing

3

Children with SLI can exhibit reduced attention to a talker's mouth [Recurso electrónico] / Ferran Pons... [et al.]

Este artículo se encuentra disponible en su edición electrónica. Su acceso electrónico es a través del enlace de 'Acceso al documento'.

References: p. 188-192

It has been demonstrated that children with specific language impairment (SLI) show difficulties not only with auditory but also with audiovisual speech perception. The goal of this study was to assess whether children with SLI might show reduced attention to the talker's mouth compared to their typically developing (TD) peers. An additional aim was to determine whether the pattern of attention to a talking face would be related to a specific subtype of SLI. We used an eye-tracker methodology and presented a video of a talker speaking the children's native language. Results revealed that children with SLI paid significantly less attention to the mouth than the TD children. More specifically, it was also observed that children with a phonological-syntactic deficit looked less to the mouth as compared to the children with a lexical-syntactic deficit.

Language learning. -- 2018 (June), v. 68, supp. 1, p. 180-192

1. Audiovisual speech 2. Children 3. Eyes-mouth 4. Specific language impairment (SLI)

4

Eye movements during visual speech perception in deaf and hearing children [Recurso electrónico] / Elizabeth Worster ... [et al.]

Este artículo se encuentra disponible en su edición electrónica. Su acceso electrónico es a través del enlace de 'Acceso al documento'.

References: p. 176-179

For children who are born deaf, lipreading (speechreading) is an important source of access to spoken language. We used eye tracking to investigate the strategies used by deaf ($n = 33$) and hearing 5-8-year-olds ($n = 59$) during a sentence speechreading task. The proportion of time spent looking at the mouth during speech correlated positively with speechreading accuracy. In addition, all children showed a tendency to watch the mouth during speech and watch the eyes when the model was not speaking. The extent to which the children used this communicative pattern, which we refer to as social-tuning, positively predicted their speechreading performance, with the deaf children showing a stronger relationship than the hearing children. These data suggest that better speechreading skills are seen in those children, both deaf and hearing, who are able to guide their visual attention to the appropriate part of the image and in those who have a good understanding of conversational turn-taking.

Language learning. -- 2018 (June), v. 68, supp. 1, p. 159-179

1. Deaf 2. Eye gaze 3. Eye tracking 4. Hearing 5. Lipreading 6. Speechreading

5

Impact of bilingualism on infants' ability to learn from talking and nontalking faces [Recurso electrónico] / Mathilde Fort ... [et al.]

Este artículo se encuentra disponible en su edición electrónica. Su acceso electrónico es a través del enlace de 'Acceso al documento'.

References: p. 51-57

To probably overcome the challenge of learning two languages at the same time, in-fants raised in a bilingual environment pay more attention to the mouth of talking faces than same-age monolinguals. Here we examined the consequences of such preference for monolingual and bilingual infants' ability to perceive nonspeech information coming from the eyes or the mouth region of talking faces. Using a learning procedure, we recorded 15-month-olds' and 18-month-olds' gaze while watching, at each trial, a speaker producing a sentence systematically followed by a nonspeech movement (eye-brow raise vs. lip protrusion). Differences were obtained for infants in the eyebrow-raise condition. While 15-month-old monolinguals and 18-month-old bilinguals learned to anticipate the eyebrow-raise movement before its appearance, 15-month-old bilinguals did not (i.e., they continued to look at the mouth region). Thus, bilingualism appears to impact not only how infants explore talking faces but also how they learn from them.

Language learning. -- 2018 (June), v. 68, supp. 1, p. 31-57

1. Attention 2. Audiovisual 3. Bilingualism 4. Early language acquisition 5. Infancy 6. Learning 7. Talking faces

6

Multimodal Language Learning [Recurso electrónico] : how to crack the speech code by ear and by eye / Mathilde Fort, Nuria Sebastian-Galles

Este artículo se encuentra disponible en su edición electrónica. Su acceso electrónico es a través del enlace de 'Acceso al documento'.

References: p. 12-13

Language learning. -- 2018 (June), v. 68, supp. 1, p. 7-13

1. Attention 2. Audiovisual 3. Bilingualism 4. Early language acquisition 5. Infancy 6. Learning

7

Multisensory representation of gender in infants [Recurso electrónico] : an eye-tracking study / David Méary, Carole Jaggie, Olivier Pascalis

Este artículo se encuentra disponible en su edición electrónica. Su acceso electrónico es a través del enlace de 'Acceso al documento'.

References: p. 28-30

Visual and auditory information jointly contribute to face categorization processes in humans, and gender is a socially relevant multisensory category specified by faces and voices that is detected early in infancy. We used an eye tracker to study how gender coherence in audio and visual modalities influence face scanning in 9- to 12-month-old infants and in adults. While viewing dynamic faces, infants attended to a speaker's mouth region to a greater extent than adults, regardless of speech, which was mostly due to an increase in mean fixation durations. However, the time course of attending to eye and mouth regions showed similarities in adults and infants. Face-voice congruence for gender appeared to have little effect on measures of face scanning. Overall, results suggested that 9- to 12-month-old infants give more weight to the processing of a speaker's mouth compared to adults but that infants already have an adult-like face-scanning strategy.

Language learning. -- 2018 (June), v. 68, supp. 1, p. 14-30

1. Adults 2. Eye tracking 3. Face 4. Gender 5. Infants 6. Language development 7. Multisensory 8. Voice

8

Neural processing of congruent and incongruent audiovisual speech in school-age children and adults [Recurso electrónico] / Jenni Heikkilä ... [et al.]

Este artículo se encuentra disponible en su edición electrónica. Su acceso electrónico es a través del enlace de 'Acceso al documento'.

References: p. 75-79

Seeing articulatory gestures enhances speech perception. Perception of auditory speech can even be changed by incongruent visual gestures, which is known as the McGurk effect (e.g., dubbing a voice saying /mi/ onto a face articulating /ni/, observers often hear /ni/). In children, the McGurk effect is weaker than in adults, but no previous knowledge exists about the neural-level correlates of the McGurk effect in school-age children. Using brain event-related potentials, we investigated change detection responses to congruent and incongruent audiovisual speech in school-age children and adults. We used an oddball paradigm with a congruent audiovisual /mi/ as the standard stimulus and a congruent audiovisual /ni/ or McGurk A/mi/V/ni/ as the deviant stimulus. In adults, a similar change detection response was elicited by both deviant stimuli. In children, change detection responses differed between the congruent and the McGurk stimulus. This reflects a maturational difference in the influence of visual stimuli on auditory processing.

Language learning. -- 2018 (June), v. 68, supp. 1, p. 58-79

1. Audiovisual 2. Development 3. EEG 4. McGurk effect 5. Neural processing 6. Speech

9

Response errors in females' and males' sentence lipreading necessitate structurally different models for predicting lipreading accuracy [Recurso electrónico] : an ERP study / Lynne E. Bernstein

Este artículo se encuentra disponible en su edición electrónica. Su acceso electrónico es a través del enlace de 'Acceso al documento'.

References: p. 152-158

Lipreaders recognize words with phonetically impoverished stimuli, an ability that varies widely in normal-hearing adults. Lipreading accuracy for sentence stimuli was modeled with data from 339 normal-hearing adults. Models used measures of phonemic perceptual errors, insertion of text that was not in the stimulus, gender, and auditory speech perception in noise thresholds to predict lipreading accuracy of 10,170 responses. Interactions of the lipreading predictors with gender necessitated different models for males' versus females' lipreading. Females' lipreading accuracy was significantly predicted by their auditory speech in noise thresholds and an interaction between the magnitude of their perceptual errors and the number of nonstimulus phonemes in their responses. Males' lipreading accuracy was a function of their auditory speech in noise thresholds in interaction with the magnitude of their perceptual errors. The predictor coefficients of the two models suggest the possibility of different mechanisms influencing lipreading accuracy in males versus females.

Language learning. -- 2018 (June), v. 68, supp. 1, p. 127-158

1. Audiovisual speech processing 2. Gender 3. Individual differences 4. Lipreading 5. Mixed models 6. Noise

10

The role of audiovisual speech in the early stages of lexical processing as revealed by the ERP word repetition effect [Recurso electrónico] / Anahita Basirat, Angèle Brunellière, Robert Hartsuiker

Este artículo se encuentra disponible en su edición electrónica. Su acceso electrónico es a través del enlace de 'Acceso al documento'.

References: p. 97-100

Numerous studies suggest that audiovisual speech influences lexical processing. However, it is not clear which stages of lexical processing are modulated by audiovisual speech. In this study, we examined the time course of the access to word representations in long-term memory when they were presented in auditory-only and audiovisual modalities. We exploited the effect of the prior access to a word on the subsequent access to that word known as the word repetition effect. Using event-related potentials, we identified an early time window at about 200 milliseconds and a late time window starting at about 400 milliseconds related to the word repetition effect. Our results showed that the word repetition effect over the early time window was modulated by the speech modality while this influence of speech modality was not found over the late time window. Visual cues thus play a role in the early stages of lexical processing.

Language learning. -- 2018 (June), v. 68, supp. 1, p. 80-101

1. Audiovisual speech 2. ERP 3. Lexical processing 4. Repetition effect
