Effects of stimulus naturalness and contralateral interferers on lexical bias in consonant identification

Datasets

These datasets comprise listeners' judgments of voicing for the initial consonant of the sets of syllables used in the experiments described in the article of the same title (Roberts, Summers, and Bailey, 2022; Journal of the Acoustical Society of America). There are two spreadsheets for each experiment. One spreadsheet contains listeners' categorization responses for the initial consonant ([g] or [k]), averaged over 10 repetitions, from which the identification functions and Ganong shifts are computed; the other contains the response category and reaction time for each individual trial, from which the reaction-time profiles and overall reaction times are computed. These data can also be used to compare the reaction times for word and non-word responses. Note that the vocoded versions of the syllables were made from reference stimuli that included a leading 40-ms silence (see main article) which must be deducted from the notional reaction time measured to obtain the correct value.

Each spreadsheet comprises two summary worksheets, the first of which includes relevant demographic information, and individual worksheets for each listener. Each summary worksheet contains aggregated responses and computed measures for each condition (for details, see below). Subsequent worksheets comprise the raw data for each listener in each condition, either for each stimulus when aggregated across the ten repetitions (Ganong shifts) or for each trial (reaction times).

Experiment 1

Ganong shifts

The first worksheet (ALL) contains relevant demographic information and the computed Ganong shifts for each listener (and averaged across listeners) in each condition—reference (REF), modulated noise band (MNB), and modulated sine band (MSB). The second worksheet (Summary) computes the mean Ganong shifts across listeners (Column K, bold) in each condition from the mean differences in the identification functions at each continuum position in the two contexts ("_ISS" and "_IFT").

The raw data in the subsequent worksheets comprise: (a) stimulus ID [Column heading: Stim], (b) stimulus type (REF, MNB, or MSB), (c) number of [k] responses, (d) number of trials (always 10 here), (g) continuum step (1-8), (h) proportion of [k] responses in "_IFT" context, (i) proportion of [k] responses in "_ISS" context, (j) difference score (and averaged over all 8 positions to give the Ganong shift in percent).

Reaction times

The first worksheet (ALL) contains relevant demographic information and the computed mean of median reaction times for each listener (and averaged across listeners) in each condition (REF, MNB, and MSB). The second worksheet (Summary) computes the mean of median reaction times across listeners in each condition for each continuum position and context ("_ISS" and "_IFT").

The raw data in the subsequent worksheets comprise: (a) stimulus ID [Column heading: Stim], (b) stimulus type (excitation source) for condition (always REF in this case) [Type], (c) response category ([g] or [k]), (d) reaction time (ms), (g) computed median reaction time (ms), (i) stimulus ID [Stim], (j) excitation source for condition (always MNB in this case) [Type], (k) response category ([g] or [k]), (l) uncorrected reaction time (ms), (m) corrected reaction time (subtracts 40 ms), (o) computed median reaction time (ms), (q) stimulus ID [Stim], (r) excitation source for condition (always MSB in this case)

[Type], (s) response category ([g] or [k]), (t) uncorrected reaction time (ms), (u) corrected reaction time (subtracts 40 ms), (w) computed median reaction time (ms).

Experiment 2

Ganong shifts

The first worksheet (Summary) contains relevant demographic information and the computed Ganong shifts in each spatial condition (MNBF and MNBR, target ear = fixed or random)—and collapsed across them—in each interference condition (C1-C4) for each listener. The second worksheet (SummaryContinua) treats spatial condition in the same way and computes the mean Ganong shifts across listeners in each interference condition from the mean differences in the identification functions at each continuum position in the two contexts ("_ISS" and "_IFT").

The raw data in the subsequent worksheets comprise: (a) stimulus ID [Column heading: Stim], (b) spatial condition (MNBF = fixed-ear target or MNBR = random-ear target), (c) number of [k] responses, (d) number of trials (always 10 here), (f) identifies spatial condition (MNBF or MNBR) and interference condition (C1-C4), (g) continuum step (1-8), (h) proportion of [k] responses in "_IFT" context, (i) proportion of [k] responses in "_ISS" context, (j) difference score (and averaged over all 8 positions to give the Ganong shift in percent), (m) collapsed case: identifies interference condition (C1-C4), (n) collapsed case: continuum step (1-8), (o) collapsed case: proportion of [k] responses in "_IFT" context, (p) collapsed case: proportion of [k] responses in "_ISS" context, (q) collapsed case: difference score (and averaged over all 8 positions to give the Ganong shift in percent).

Reaction times

The first worksheet (Summary) contains relevant demographic information and the computed mean of median reaction times in each spatial condition (MNBF or MNBR, target ear = fixed or random)—and collapsed across them—in each interference condition (C1-C4) for each listener. The second worksheet (SummaryContinua) treats spatial condition in the same way and computes the mean of median reaction times across listeners in each interference condition for each continuum position and context ("_ISS" and "_IFT").

The raw data in the subsequent worksheets comprise: (a) stimulus ID [Column heading: Stim], (b) spatial condition (always MNBF—fixed-ear target—in this case), (c) response category ([g] or [k]), (d) uncorrected reaction time (ms), (e) corrected reaction time (subtracts 40 ms), (f) ear of presentation (target, interferer), (g) computed median reaction time (ms), (i)-(l) median and mean-of-median reaction times in MNBF case for C1-C4, (n) stimulus ID [Stim], (o) spatial condition (always MNBR—random-ear target—in this case), (p) response category ([g] or [k]), (q) uncorrected reaction time (ms), (r) corrected reaction time (subtracts 40 ms), (s) ear of presentation (target, interferer), (t) computed median reaction time (ms), (v)-(y) median and mean-of-median reaction times in MNBR case for C1-C4, (aa) spatial condition (always collapsed across MNBF and MNBR cases), (ac)-(af) median and mean-of-median reaction times for C1-C4 when collapsed across spatial condition.