Supplemental Material S1. Detailed analyses.

Figure S1 (below) presents detailed results from the same 5 linguistic production articles summarized in the Results section but broken down into type of linguistic comparison (e.g., modality, lexical, or phrasal) and by type of dependent measure (e.g., percent correct or an acoustic measure).

Figure S1

Linguistic production: Detailed Forest Plot of Hedges' g

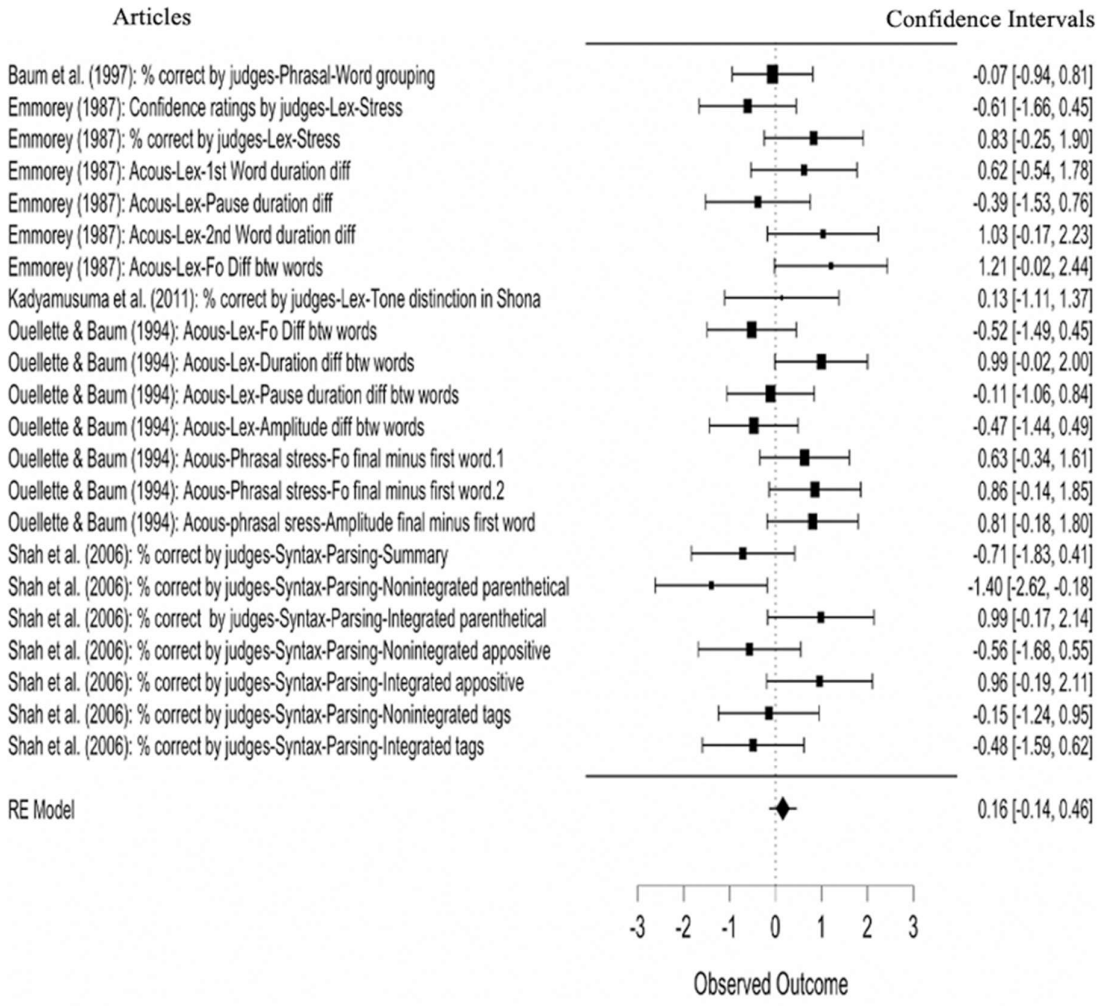


Figure S2 (below) shows individual comparisons from the linguistic comprehension articles broken down by lexical, phrasal, and modality (question, statement, command) distinctions. A RHD advantage is typical, with exceptions.

Figure S2

Linguistic comprehension: Detailed Forest Plot of Hedges' g

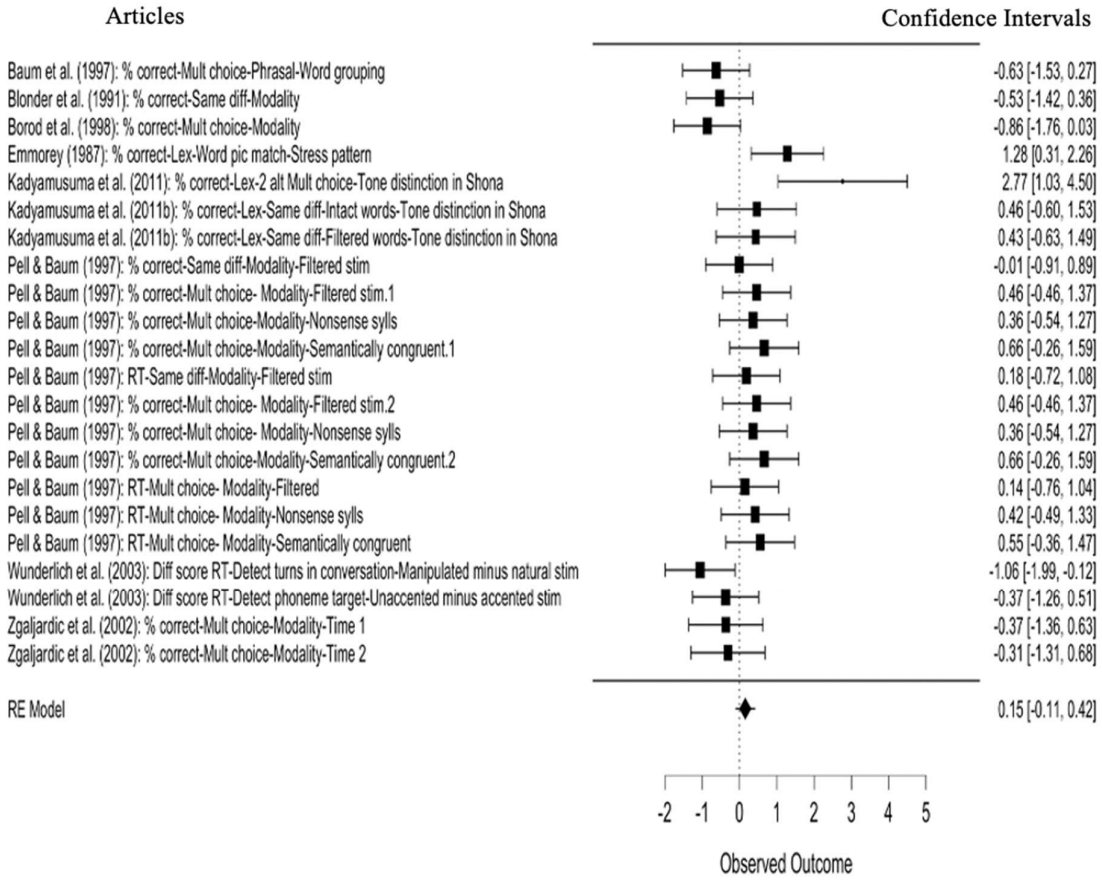


Figure S3 (below) shows individual comparisons from the single emotional production article broken down by task (multiple choice percent correct by judges, intensity ratings by judges) for two time points and for groups with frontal and nonfrontal lesions. Careful examination of the figure shows that the RHD impairment in percent correct got worse from Time 1 to Time 2 for both the Frontal and Nonfrontal sets, as did the intensity measure for the NonFrontal groups. This pattern illustrates the heterogeneity of results observed throughout this literature.

Figure S3

Emotional production: Detailed Forest Plot of Hedges' g

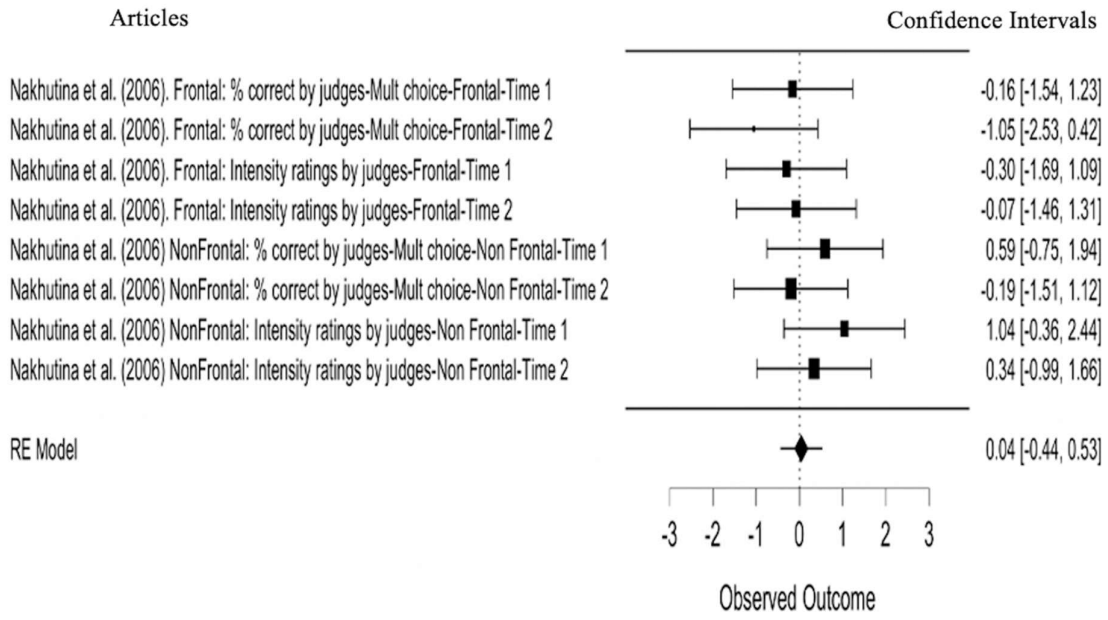


Figure S4 (below) shows the individual comparisons for emotion comprehension and illustrates the different impression if one treats each comparison from a single article as distinct.

Figure S4

Emotional comprehension: Detailed Forest Plot of Hedges' g

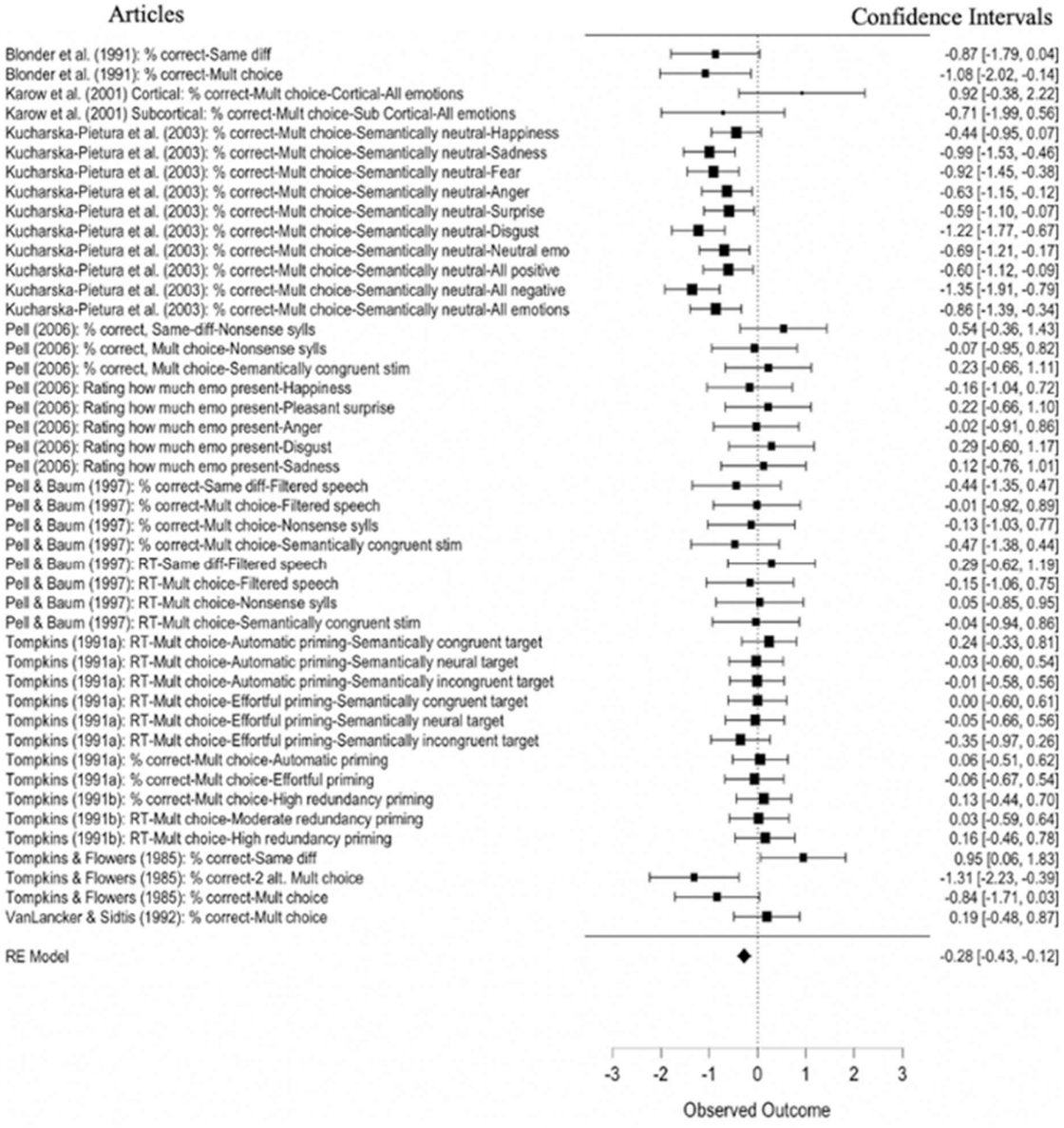
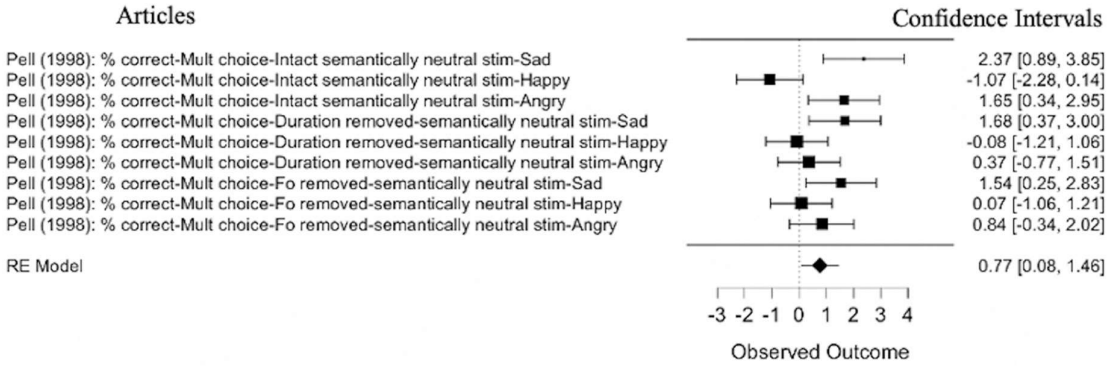


Figure S5 shows the results for Pell (1998). Recall that the Pell 1998 effect sizes are not comparable to others due to the author's calculation of standard deviations based on differences across condition means rather than based on differences across individual participants; only the direction of effect is interpretable. In addition, the Pell et al. RHD advantage was less than that for the Linguistic comprehension effects obtained from the same individuals.

Figure S5

Pell (1998) Emotional comprehension: Detailed Forest Plot of Hedges' g



Forest Plot Labels

Linguistic Production

Baum et al. (1997)	% correct by judges-Phrasal-Word grouping	Percent correct by judges Phrases spoken to convey pictorial grouping of 3 colored squares: "Pink and black and green", Table 1
Emmorey (1987)	Confidence ratings by judges-Lex-Stress	Confidence ratings by judges hearing lexical distinctions based on stress, LHD Fl, Nonfl mixed (analysis of table data), Table 3
Emmorey (1987)	% correct by judges-Lex-Stress	Percent correct by judges hearing lexical distinctions based on stress, LHD Fl, Nonfl mixed (analysis of table data), Table 3
Emmorey (1987)	Acous-Lex-1st Word duration diff	Duration diff of 1st word ("Blue Jay") to convey lexical distinction, RHD, LHD Nonfl only ACOUSTIC, Table 2
Emmorey (1987)	Acous-Lex-Pause duration diff	Duration diff of pause ("Blue Jay") to convey lexical distinction, RHD, LHD Nonfl only, ACOUSTIC, Table 2
Emmorey (1987)	Acous-Lex-2nd Word duration diff	Duration diff of 2nd word ("Blue Jay") to convey lexical distinction, RHD, LHD Nonfl only, ACOUSTIC, Table 2
Emmorey (1987)	Acous-Lex-Fo Diff btw words	Pitch Difference between words ("Blue Jay") to convey lexical distinction, RHD, LHD Nonfl only, ACOUSTIC, Table 2
Kadyamusuma et al. (2011) 25(10)	% correct by judges-Lex-Tone distinction in Shona	Percent correct by judges for lexical distinction distincguished ONLY by tone in Shona Language, (analysis of table data), Table 7
Ouellette & Baum (1994)	Acous-Lex-Fo Diff btw words	Fund Freq Noun Phrase minus Compound Noun, to distinguish Compound noun vs two-word Adj-N phrase, ACOUSTIC, (analysis of table data), Tables 3-4
Ouellette & Baum (1994)	Acous-Lex-Duration diff btw words	Duration of Noun Phrase minus Compound Noun to distinguish Compound noun vs two-word Adj-N phrase, ACOUSTIC, (analysis of table data), Tables 3-4
Ouellette & Baum (1994)	Acous-Lex-Pause duration diff btw words	Pause Duration of Noun Phrase minus Compound Noun to distinguish Compound noun vs two-word Adj-N phrase, ACOUSTIC, (analysis of table data), Tables 3-4

Ouellette & Baum (1994)	Acous-Lex-Amplitude diff btw words	Amplitude of Noun Phrase minusCompound Noun to distinguish Compound noun vs two-word Adj-N phrase, ACOUSTIC, (analysis of table data), Tables 3-4
Ouellette & Baum (1994)	Acous-Phrasal stress-Fo final minus first word	Fund Freq of Sentence Final minus Sentence Initial word to indicate stressed position in sentence ACOUSTIC (analysis of table data) Tables 6-7
Ouellette & Baum (1994)	Acous-Phrasal stress-Fo final minus first word	Duration of Sentence Final word minus Sentence Initial word to indicate stressed position in sentence ACOUSTIC (analysis of table data) Tables 6-7
Ouellette & Baum (1994)	Acous-phrasal sress-Amplitude final minus first word	Amplitude of Sentence Final word minus Sentence Initial word to indicate stressed position in sentence ACOUSTIC (analysis of table data) Tables 6-7
Shah et al. (2006).	% correct by judges-Syntax-Parsing-Summary	Summary percent correct syntactic parsing of ambiguous phrases by judges (analysis of table data), Table 3
Shah et al. (2006).	% correct by judges-Syntax-Parsing-Nonintegrated parenthetical	Parentetical Nonintegrated phrase percent correct syntactic parsing of ambiguous phrases by judges (analysis of table data), Table 3
Shah et al. (2006).	% correct by judges-Syntax-Parsing-Integrated parenthetical	Parenthetical Integrated phrase percent correct syntactic parsing of ambiguous phrases by judges (analysis of table data), Table 3
Shah et al. (2006).	% correct by judges-Syntax-Parsing-Nonintegrated appositive	Appositive NonIntegrated phrase percent correct syntactic parsing of ambiguous phrases by judges (analysis of table data), Table 3
Shah et al. (2006).	% correct by judges-Syntax-Parsing-Integrated appositive	Appositive Integrated phrase percent correct syntactic parsing of ambiguous phrases by judges (analysis of table data), Table 3
Shah et al. (2006).	% correct by judges-Syntax-Parsing-Nonintegrated tags	Tags NonIntegrated phrase percent correct syntactic parsing of ambiguous phrases by judges (analysis of table data), Table 3
Shah et al. (2006).	% correct by judges-Syntax-Parsing-Integrated tags	Tags Integrated phrase percent correct syntactic parsing of ambiguous phrases by judges (analysis of table data), Table 3
Yang et al. (2017)	% correct by judges-Idomatic vs literal phrases	Percent correct distinguishing literal vs idiomatic meaning of phrases, judges as unit of statistical analysis

Yang et al. (2017)	Goodness ratings by judges-Idomatic vs literal phrases	Goodness ratings for distinguishing literal vs idiomatic meaning of phrases, judges as unit of statistical analysis
Emotional Production		
Nakhutina et al. (2006). Frontal	% correct by judges-Mult choice-Frontal-Time 1	Percent correct, Ident mult choice several emotions by judges, frontal, TIME1, Table 4
Nakhutina et al. (2006). Frontal	% correct by judges-Mult choice-Frontal-Time 2	Percent correct, Ident mult choice several emotions by judges, frontal, TIME2, Table 4
Nakhutina et al. (2006). Frontal	Intensity ratings by judges-Frontal-Time 1	Intensity ratings of several emotions by judges, frontal TIME1, Table 4
Nakhutina et al. (2006). Frontal	Intensity ratings by judges-Frontal-Time 2	Intensity ratings of several emotions by judges, frontal, TIME2, Table 4
Nakhutina et al. (2006) NonFrontal	% correct by judges-Mult choice-Non Frontal-Time 1	Percent correct, Ident mult choice several emotions by judges, NONfrontal, TIME1, Table 4,
Nakhutina et al. (2006) NonFrontal	% correct by judges-Mult choice-Non Frontal-Time 2	Percent correct, Ident mult choice several emotions, by judges NONfrontal, TIME2, Table 4
Nakhutina et al. (2006) NonFrontal	Intensity ratings by judges-Non Frontal-Time 1	Intensity ratings of several emotions by judges, NONfrontal, TIME1, Table 4
Nakhutina et al. (2006) NonFrontal	Intensity ratings by judges-Non Frontal-Time 2	Intensity ratings of several emotions b y judges, NONfrontal, TIME2, Table 4
Linguistic Comprehension		
Baum et al. (1997)	% correct-Mult choice-Phrasal-Word grouping	Percent correct, Matching heard phrase ("Pink and black and green") to pictorial grouping of 3 colored squares , Table 2
Blonder et al. (1991)	% correct-Same diff-Modality	Percent correct Same-Different discrimimination: question vs statement, Table 3
Borod et al. (1998)	% correct-Mult choice-Modality	Percent correct, Identifiction of modality (mult choice): Question, statement, emphatic, conveyed using nonsense syllables, (24 items), Table 4
Emmorey (1987)	% correct-Lex-Word pic match-Stress pattern	Percent correct, Word Ident based on stress pattern, Word-Picture matching, Nonfluent and fluent LHD data

		merged (analysis of table data), Table 1
Kadyamusuma et al. (2011) 25(10)	% correct-Lex-2 alt Mult choice-Tone distinction in Shona	Percent correct, Ident of words from 2 alternatives, ONLY tone differences between words in Shona language (analysis of table data), Table 7
Kadyamusuma et al. (2011b) 25(5)	% correct-Lex-Same diff-Intact words-Tone distinction in Shona	Percent correct, Same-Different discrimination of INTACT 2-syllable words based ONLY on tone in Shona language
Kadyamusuma et al. (2011b) 25(5)	% correct-Lex-Same diff-Filtered words-Tone distinction in Shona	Percent correct, Same-Different discrimination of FILTERED 2-syllable words based ONLY on tone in Shona language
Pell (1998)	% correct-Sent-Emphatic stress-Mult choice-Initial pos-Intact	Percent correct. Detect emphatic stress in sentence, BASELINE Initial Sentence position, Mult Choice - 3 alts (begin, middle, end), n=8 conditions, Table 4
Pell (1998)	% correct-Sent-Emphatic stress-Mult choice-Final pos-Intact	Percent correct, Detect emphatic stress in sentence BASELINE Final sentence position, Mult Choice - 3 alts (begin, middle, end) n=8 conditions, Table 4
Pell (1998)	% correct-Sent-Emphatic stress-Mult choice-Initial pos-Duration removed	Percent correct, Detect emphatic stress in sent, DURATION REMOVED, Initial sent position, Mult Choice 3 alts (begin, middle, end) n=8 conditions, Table 4
Pell (1998)	% correct-Sent-Emphatic stress-Mult choice-Final pos-Duration removed	Percent correct,Detect emphatic stress in sent, DURATION REMOVED, Final sent, position, Mult Choice - 3 alts (begin, middle, end) n=8 conditions, Table 4
Pell (1998)	% correct-Sent-Emphatic stress-Mult choice-Initial pos-Fo removed	Percent correct, Detect emphatic stress in sent, FUND FREQ REMOVED, Initial sent position, Mult Choice - 3 alts (begin, middle, end) n=8 cond, Table 4
Pell (1998)	% correct-Sent-Emphatic stress-Mult choice-Final pos-Fo removed	Percent correct, Detect emphatic stress in sent, FUND FREQ REMOVED, Final sent position, Mult Choice - 3 alts (begin, middle, end) n=8 cond, Table 4
Pell & Baum (1997)	% correct-Same diff-Modality-Filtered stim	Percent correct Same-Different discrimination of FILTERED speech different modalities, Table 2
Pell & Baum (1997)	% correct-Mult choice-Modality-Filtered stim	Percent correct Identification of modality of FILTERED speech (mult

		choice 3- alternatives: question, statement, imperative), Table 4
Pell & Baum (1997)	% correct-Mult choice-Modality-Nonsense sylls	Percent correct Identification of modality of NONSENSE syllables, (mult choice 3- alternatives: question, statement, imperative), Table 4
Pell & Baum (1997)	% correct-Mult choice-Modality-Semantically congruent	Percent correct identification of modality in SEMANTICALLY CONGRUENT stimuli, (mult choice 3- alternatives: question statement, imperative), Table 4
Pell & Baum (1997)	RT-Same diff-Modality-Filtered stim	Reaction time Same-Different discrimination of FILTERED stimuli different modalities, Table 2
Pell & Baum (1997)	% correct-Mult choice-Modality-Filtered stim	Percent correct, Iden (3 alts: ques, statement, imperative), FILTERED stimuli, Table 4
Pell & Baum (1997)	% correct-Mult choice-Modality-Nonsense sylls	Percent correct, Iden (3 alts: ques, statement, imperative), NONSENSE syll stimuli, Table 4
Pell & Baum (1997)	% correct-Mult choice-Modality-Semantically congruent	Percent correct, Identification of modality (3 alts: ques, statement, imperative), SEMANTICALLY CONGRUENT stimuli, Table 4
Pell & Baum (1997)	RT-Mult choice-Modality-Filtered	Reaction time, Identification of modality (3 alts: ques, statement, imperative), FILTERED stimuli, Table 5
Pell & Baum (1997)	RT-Mult choice-Modality-Nonsense sylls	Rection time, Identification of modality (3 alts: ques, statement, imperative), NONSENSE syll stimuli, Table 5
Pell & Baum (1997)	RT-Mult choice-Modality-Semantically congruent	Reaction time, Identification of modality (3 alts: ques, statement, imperative), SEMANTICALLY CONGRUENT stimuli, Table 5
Wunderlich et al. (2003)	Diff score RT-Detect turns in conversation-Manipulated minus natural stim	Reaction time difference score: Manipulated minus Natural stim, detect turn taking in conversation, higher values better, Table 3
Wunderlich et al. (2003)	Diff score RT-Detect phoneme target-Unaccented minus accented stim	Reaction time difference score:: Unaccented minus Accented stim, detect phoneme target w/wo sentential stress, higher values better?, Table 4
Zgaljardic et al. (2002)	% correct-Mult choice-Modality-Time 1	Number correct, Ident Mult choice modality 3 alts (statement, question, exclamation) TIME 1 (24 items), Table 3

Zgaljardic et al. (2002)	% correct-Mult choice-Modality-Time 2	Number correct, Ident Mult choice 3 alts (statement, question, exclamation) TIME 2 (24 items), Table 3
Emotional Comprehension		
Blonder et al. (1991)	% correct-Same diff	Percent corrct, Same-Different discrim of emotions, Table 3
Blonder et al. (1991)	% correct-Mult choice	Percent correct, Identification of emotion (mult choice) from set of 5, Table 3
Karow et al. (2001) Cortical	% correct-Mult choice-Cortical-All emotions	Number correct, Ident (mult choice out of 4 (happy, sad, angry, neutral) CORTICAL (20 ITEMS), Table 5
Karow et al. (2001) Subcortical	% correct-Mult choice-Sub Cortical-All emotions	Number correct, Ident (mult choice out of 4 (happy, sad, angry, neutral) SUBCORTICAL (20 ITEMS), Table 5
Kucharska-Pietura et al. (2003).	% correct-Mult choice-Semantically neutral-Happiness	Percent correct, Ident 6-alt mult choice, Semantically neutral sentences, HAPPINESS, Table 3
Kucharska-Pietura et al. (2003).	% correct-Mult choice-Semantically neutral-Sadness	Percent correct, Ident 6-alt mult choice, Semantically neutral sentences, SADNESS, Table 3
Kucharska-Pietura et al. (2003).	% correct-Mult choice-Semantically neutral-Fear	Percent correct, Ident 6-alt mult choice, Semantically neutral sentences, FEAR, Table 3
Kucharska-Pietura et al. (2003).	% correct-Mult choice-Semantically neutral-Anger	Percent correct, Ident 6-alt mult choice, Semantically neutral sentences, ANGER, Table 3
Kucharska-Pietura et al. (2003).	% correct-Mult choice-Semantically neutral-Surprise	Percent correct, Ident 6-alt mult choice, Semantically neutral sentences, SURPRISE, Table 3
Kucharska-Pietura et al. (2003).	% correct-Mult choice-Semantically neutral-Disgust	Percent correct, Ident 6-alt mult choice, Semantically neutral sentences, DISGUST, Table 3
Kucharska-Pietura et al. (2003).	% correct-Mult choice-Semantically neutral-Neutral emo	Percent correct, Ident 6-alt mult choice, Semantically neutral sentences, NEUTRAL, Table 3
Kucharska-Pietura et al. (2003).	% correct-Mult choice-Semantically neutral-All positive	Percent correct, Ident 6-alt mult choice, Semantically neutral sentences, ALL POSITIVE, Table 3
Kucharska-Pietura et al. (2003).	% correct-Mult choice-Semantically neutral-All negative	Percent correct, Ident 6-alt mult choice, Semantically neutral sentences, ALL NEGATIVE, Table 3
Kucharska-Pietura et al. (2003).	% correct-Mult choice-Semantically neutral-All emotions	Percent correct, Ident 6-alt mult choice, Semantically neutral sentences, TOTAL, Table 3

Pell (1998)	% correct-Mult choice-Intact semantically neutral stim-Sad	Percent correct Ident mult choice 3 alt: sad, happy, angry, BASELINE = INTACT stim, only SAD, n=6 conditions as unit of statistical analysis, Table 5
Pell (1998)	% correct-Mult choice-Intact semantically neutral stim-Happy	Percent correct Ident mult choice 3 alt: sad, happy, angry, BASELINE =INTACT stim, only HAPPY, n=6 conditions as unit of statistical analysis, Table 5
Pell (1998)	% correct-Mult choice-Intact semantically neutral stim-Angry	Percent correct Ident mult choice 3 alt: sad, happy, angry, BASELINE = INTACT stim, only ANGRY, n=6 conditions as unit of statistical analysis, Table 5
Pell (1998)	% correct-Mult choice-Duration removed-semantically neutral stim-Sad	Percent correct Ident mult choice 3 alt: sad, happy, angry, DURATION REMOVED, only SAD, n=6 conditions as unit of statistical analysis, Table 5
Pell (1998)	% correct-Mult choice-Duration removed-semantically neutral stim-Happy	Percent correct Ident mult choice 3 alt: sad, happy, angry, DURATION REMOVED, only HAPPY, n=6 conditions as unit of statistical analysis, Table 5
Pell (1998)	% correct-Mult choice-Duration removed-semantically neutral stim-Angry	Percent correct Ident mult choice 3 alt: sad, happy, angry, DURATION REMOVED, only ANGRY, n=6 conditions as unit of statistical analysis, Table 5
Pell (1998)	% correct-Mult choice-Fo removed-semantically neutral stim-Sad	Percent correct Ident mult choice 3 alt: sad, happy, angry, FUND FREQ REMOVED, only SAD, n=6 conditions as unit of statistical analysis, Table 5
Pell (1998)	% correct-Mult choice-Fo removed-semantically neutral stim-Happy	Percent correct Ident mult choice 3 alt: sad, happy, angry, FUND FREQ REMOVED, only HAPPY, n=6 conditions as unit of statistical analysis, Table 5
Pell (1998)	% correct-Mult choice-Fo removed-semantically neutral stim-Angry	Percent correct Ident mult choice 3 alt: sad, happy, angry, FUND FREQ REMOVED, only ANGRY, n=6 conditions as unit of statistical analysis, Table 5
Pell (2006)	% correct, Same-diff-Nonsense sylls	Correct, Same-different discrim of emotion in Nonsense syllables, Table 3

Pell (2006)	% correct, Mult choice-Nonsense sylls	Correct, Ident of emotion (Mult choice) out of 5. Pure prosody--Nonsense syllables, Table 3
Pell (2006)	% correct, Mult choice-Semantically congruent stim	Correct, Ident of emotion (Mult Choce) out of 5 prosody, SEMANTICALLY CONGRUENT content, Table 3
Pell (2006)	Rating how much emo present-Happiness	Rating how much target emo present: happiness, Table 3
Pell (2006)	Rating how much emo present-Pleasant surprise	Rating how much target emo present: pleasant surprise, Table 3
Pell (2006)	Rating how much emo present-Anger	Rating how much target emo present: anger, Table 3
Pell (2006)	Rating how much emo present-Disgust	Rating how much target emo present: disgust, Table 3
Pell (2006)	Rating how much emo present-Sadness	Rating how much target emo present: sadness, Table 3
Pell & Baum (1997)	% correct-Same diff-Filtered speech	Percent correct, Same-Different discrim of emotion, FILTERED SPEECH, Table 2
Pell & Baum (1997)	% correct-Mult choice-Filtered speech	Percent correct, Ident of emotion (Mult Choice) from 3 (happy, sad, angry) FILTERED SPEECH, Table 4
Pell & Baum (1997)	% correct-Mult choice-Nonsense sylls	Percent corrcect, Ident of emotion (Mult Choice) from 3 (happy, sad, angry) NONSENSE SYLLs, Table 4
Pell & Baum (1997)	% correct-Mult choice-Semantically congruent stim	Percent correct, Ident of emotion (Mult Choice) from 3 (happy, sad, angry) CONGRUENT SEMANTIC, Table 4
Pell & Baum (1997)	RT-Same diff-Filtered speech	Reaction time, Same-Different discrim of emotion, filtered speech, Table 2
Pell & Baum (1997)	RT-Mult choice-Filtered speech	Reaction time, Ident of emotion (Mult Choice) from 3 (happy, sad, angry) FILTERED SPEECH, Table 5
Pell & Baum (1997)	RT-Mult choice-Nonsense sylls	Rection time, Ident of emotion (Mult Choice) from 3 (happy, sad, angry) NONSENSE SYLLs, Table 5
Pell & Baum (1997)	RT-Mult choice-Semantically congruent stim	Reaction time, Ident of emotion (Mult Choice) from 3 (happy, sad, angry) CONGRUENT SEMANTIC, Table 5
Tompkins (1991a)	RT-Mult choice-Automatic priming-Semantically congruent target	Reaction time, Automatic Priming Task to ident emotion, Semantically CONGRUENT, Table 4
Tompkins (1991a)	RT-Mult choice-Automatic priming-	Reaction time, Automatic Priming Task to ident emotion, Semantically NEUTRAL , Table 4, *** KEEP

	Semantically neural target	
Tompkins (1991a)	RT-Mult choice-Automatic priming-Semantically incongruent target	Reaction time, Automatic Priming Task to ident emotion, Semantically INCONGRUENT, Table 4
Tompkins (1991a)	RT-Mult choice-Effortful priming-Semantically congruent target	Rection time, EffortFOR Priming Task to ident emotion, Semantically CONGRUENT, Table 4
Tompkins (1991a)	RT-Mult choice-Effortful priming-Semantically neural target	Reaction time, Effortful Priming Task to ident emotion, Semantically NEUTRAL, Table 4, **** KEEP
Tompkins (1991a)	RT-Mult choice-Effortful priming-Semantically incongruent target	Reaction time, Effortful Priming Task to ident emotion, Semantically INCONGRUENT, Table 4
Tompkins (1991a)	% correct-Mult choice-Automatic priming	Number correct (60), AUTOMATIC Priming Task to ident emotion, Table 3
Tompkins (1991a)	% correct-Mult choice-Effortful priming	Number correct (60), EFFORTFUL Priming Task to ident emotion, Table 3
Tompkins (1991b)	% correct-Mult choice-High redundancy priming	Percent correct, HIGH redundancy Priming Task, to ident emotion (happy, angry, afraid neutral), Table 3
Tompkins (1991b)	RT-Mult choice-Moderate redundancy priming	Reaction time, MODERATE redundancy Priming Task, to ident emotion (happy, angry, afraid neutral), Table 3
Tompkins (1991b)	RT-Mult choice-High redundancy priming	Reaction time, HIGH redundancy Priming Task, to ident emotion (happy, angry, afraid neutral), Table 3
Tompkins & Flowers (1985)	% correct-Same diff	Percent correct, Same-Different Discrim of emotion, Table 2
Tompkins & Flowers (1985)	% correct-2 alt. Mult choice	Percent correct, Mood I Iden mult choice of emotion from set of 2 alternatives, Table 2
Tompkins & Flowers (1985)	% correct-Mult choice	Percent correct, Mood II Iden mult choice from set of 4 alternatives, Table 2
VanLancker & Sidtis (1992)	% correct-Mult choice	Percent correct, Ident of emotion Mult Choice from 4 alts. (sad, happy, angry, surprised)