

REFERENCES

- Abbeduto, L. (1985). The effects of linguistic complexity on children's and adults' motor programming of speech. *Language and Speech*, 28, 361-375.
- Abbs, J. H. (1973). The influence of the gamma motor system on the jaw movements during speech: A theoretical framework and some preliminary observations. *Journal of Speech and Hearing Research*, 16, 175-200.
- Abbs, J. H. (1981). Neuromotor mechanisms of speech production. In J. K. Darby (Ed.), *Speech Evaluation in Medicine* (pp. 181-198). New York: Grune & Stratton, Inc.
- Abbs, J. H. (1988). Neurophysiological processes of speech movement control. In N. J. Lass, L. V. McReynolds, J. L. Northern, & D. E. Yoder (Eds.), *Handbook of speech-language pathology and audiology* (pp.154-170). Toronto: B.C. Decker Inc.
- Abbs, J.H., & Connor, N.P. (1989). Motor coordination for functional human behaviours: Perspectives from a speech motor data base. In S.A Wallace (Ed.), *Perspectives on the coordination of movement* (pp. 157-183). North-Holland: Elsevier Science Publishers.
- Adams, G. S. (1990). *Rate and clarity of speech: An x-ray microbeam study*. Unpublished doctoral dissertation, University of Wisconsin, Madison.
- Albert, M., & Obler, L. K. (1978). *The bilingual brain*. New York: Academic Press.
- Allen, G. I., & Tsukahara, N. (1974). Cerebrocerebellar communication systems. *Physiological Reviews*, 54, 4, 957-997.
- Anderson, J. R. (1987). Skill acquisition: Compilation of weak-method problem solutions. *Psychological Review*, 94, 192-210.

- Ashton, R. (1976). Aspects of timing in child development. *Child development*, 47, 3, 622-626.
- Baddeley, A. D. (1986). *Working memory*. New York: Oxford University Press.
- Baddeley, A. D. (1992). Working memory. *Science*, 255, 556-559.
- Ballard, K. J., Barlow, J. A., & Robin, D. A. (2001). The underlying nature of apraxia of speech: A critical evaluation of Varley and Whiteside's dual route speech encoding hypothesis. *Aphasiology*, 15, 1, 50-57.
- Ballard, K. J., Granier, J. P., & Robin, D. A. (2000). Understanding the nature of apraxia of speech: Theory, analysis, and treatment. *Aphasiology*, 14, 10, 969-995.
- Ballard, K. J., & Robin, D. A. (2002). Assessment of AOS for treatment planning. *Seminars in Speech and Language*, 2, 4, 281-291.
- Baum, S. R., Blumstein, S. E., Naeser, M. A., & Palumbo, C. L. (1990). Temporal dimensions of consonant and vowel production: An acoustic and CT scan analysis of aphasic speech. *Brain and Language*, 39, 33-56.
- Bauman, J. A. (1978). *Sound duration: A comparison between performances of subjects with central nervous system disorders and normal speakers*. Unpublished doctoral dissertation, University of Colorado.
- Bay, E. (1962). Aphasia and non-verbal disorders of language. *Brain*, 85, 411-426.
- Bernstein, N. A. (1967). *The coordination and regulation of movements*. London: Pergamon Press.
- Bernstein Ratner, N., & Sih, C. C. (1987). Effects of gradual increases in sentence length and complexity on children's disfluency. *Journal of Speech and Hearing Disorders*, 47, 278-287.

- Blumstein, S. (1981). Phonological aspects of aphasia. In M. T. Sarno (Ed.), *Acquired aphasia* (pp. 129-255). New York: Academic Press.
- Blumstein, S. E., Cooper, W. E., Goodglass, H., Statlender, S., & Gottlieb, I. (1980). Production deficits in aphasia: A voice-onset time analysis. *Brain and Language*, 9, 153-170.
- Blumstein, S. E., Cooper, W. E., Zurif, E. B., & Caramazza, A. (1977). The perception and production of voice-onset time in aphasia. *Neuropsychologia*, 15, 371-383.
- Bock, J. K. (1982). Toward a cognitive psychology of syntax: Information processing contribution to sentence formulation. *Psychological Review*, 89, 1-47.
- Borden, G. J., & Harris, K. S. (1984). *Speech science primer: Physiology, acoustics and perception of speech*. Baltimore: Williams and Wilkens.
- Brooks, V. B. (1986). *The neural basis of motor control*. New York: Oxford University Press.
- Brown, J. W. (1975). The problem of repetition: A study of 'conduction' aphasia and the 'isolation' syndrome. *Cortex*, 11, 37-52.
- Buckingham, H. (1979). Explanation in apraxia with consequences for the concept of apraxia of speech. *Brain and Language*, 8, 202-226.
- Calvert, D. R. (1980). *Descriptive phonetics*. New York: Thieme-Stratton, Inc.
- Caramazza, A., Yeni-Komshian, G., Zurif, E., & Carbone, E. (1973). The acquisition of a new phonological contrast: The case of stop consonants in French-English bilinguals. *Journal of the Acoustical Society of America*, 54, 421-428.

- Clark, J., & Robin, D. A. (1998). Generalized motor programme and parameterization accuracy in apraxia of speech and conduction aphasia. *Aphasiology*, *12*, 699-713.
- Code, C., & Ball, M. J. (1982). Fricative production in Broca's aphasia: A spectrographic analysis. *Journal of Phonetics*, *10*, 325-331.
- Collins, M. J. (1989). Differential diagnosis of aphasic syndromes and apraxia of speech. In P. Square-Storer (Ed.), *Acquired apraxia of speech in aphasic adults* (pp. 87-114). Hillsdale: Lawrence Erlbaum Associates.
- Collins, M. J., Rosenbek, J. C., & Wertz, R. T. (1983). Spectrographic analysis of vowel and word duration in apraxia of speech. *Journal of Speech and Hearing Research*, *26*, 224-230.
- Colson, K. A., Luschei, E. S., & Jordan, L. S. (1986). Perceptual and acoustic analyses of stress patterning in apraxia and normal speech. *Clinical Aphasiology*, *16*, 281-290.
- Cooper, W. E. (1977). The development of speech timing. In S. J. Segalowitz, & F. A. Gruber (Eds.), *Language development and neurological theory* (pp. 357-373). New York: Academic Press.
- Cooper, W. E., Soares, C., Nicol, J., Michelow, D., & Goloskie, S. (1984). Clausal intonation after unilateral brain damage. *Language and Speech*, *27*, 17-24.
- Croot, K. (2002). Diagnosis of AOS: Definition and Criteria. *Seminars in Speech and Language*, *23*, 4, 267-279.
- Crystal, T. H., & House, A. S. (1988). A note on the variability of timing control. *Journal of Speech and Hearing Research*, *31*, 497-502.
- Danly, M., & Shapiro, B. (1982). Speech prosody in Broca's aphasia. *Brain and Language*, *16*, 171-190.

- Darley, F. L. (1982). *Aphasia*. Philadelphia: W.B. Saunders.
- Darley, F. L., Aronson, A. E., & Brown, J. R. (1975). *Motor speech disorders*. Philadelphia: W.B. Saunders.
- Deal, J. L., & Darley, F. L. (1972). The influence of linguistic and situational variables on phonemic accuracy in apraxia of speech. *Journal of Speech and Hearing Research, 15*, 639-653.
- DeLong, M. (1971). Central patterning of movement. *Neurosciences Research Program Bulletin, 10-29*.
- Demonet, J. F., Price, C., Wise, R., & Frackowiak, J. (1993). Language functions explored in normal subjects by positron emission tomography. *Human Brain Mapping, 1*, 39-47.
- DiSimoni, F. G. (1974a). Influence of vowel environment on the duration of consonants in speech of three-, six- and nine-year old children. *Journal of the Acoustical Society of America, 55*, 360-361.
- DiSimoni, F. G. (1974b). Some preliminary observations on temporal compensation in the speech of children. *Journal of the Acoustical Society of America, 56*, 697-699.
- DiSimoni, F. G., & Darley, F. L. (1977). Effect of phoneme duration control of three utterance-length conditions in an apractic patient. *Journal of Speech and Hearing Disorders, 42, 2*, 257-264.
- Dogil, G., & Mayer, J. (1998). Selective phonological impairment: A case of apraxia of speech. *Phonology, 15*, 143-188.

- Duffy, J. R., & Gawle, C. A. (1984). Apraxic speakers' vowel duration in consonant-vowel-consonant syllables. In J. C. Rosenbek, M. R. McNeil, & A. E. Aronson (Eds.), *Apraxia of speech: Physiology, acoustics, linguistics, management* (pp.167-196). San Diego: College-Hill Press.
- Dunlop, J. M., & Marquardt, T. P. (1977). Linguistic and articulatory aspects of single word production in apraxia of speech. *Cortex*, 13, 17-29.
- Fant, C. G. M. (1960). *Acoustic theory of speech production*. The Hague: Mouton
- Folkins, J. W. (1981). Muscle activity for jaw closing during speech. *Journal of Speech and Hearing Research*, 24, 601-615.
- Folkins, J. W. (1985). Issues in speech motor control and their relation to the speech of individuals with cleft palate. *Cleft Palate Journal*, 22, 2, 106-122.
- Forrest, K., Adams, S., McNeil, M. R., & Southwood, H. (1991). Kinematic, electromyographic and perceptual evaluation of speech apraxia, conduction aphasia, ataxic dysarthria, and normal speech production. In C. A. Moore, K. M. Yorkston, & D. R. Beukelman (Eds.), *Dysarthria and apraxia of speech: Perspectives on management* (pp. 147-177). Baltimore: Paul H. Brookes Publishing Co., Inc.
- Forrest, K., & Weismer, G. (1997). Acoustic analysis of dysarthric speech. In M. R. McNeil (Ed.), *Clinical management of sensorimotor speech disorders* (pp. 63-80). New York: Thieme.
- Fossett, T. R. D., McNeil, M. R., & Pratt, S. R. (2001). The effects of speaking rate manipulation on phonological encoding. *Brain and Language*, 79, 69-71.
- Freeman, F., Sands, E., & Harris, K. S. (1978). Temporal coordination of phonation and articulation in a case of verbal apraxia: A voice onset time study. *Brain and Language*, 6, 106-111.

- Friedrich, F. J., Glenn, C. G., & Marin, O. S. M. (1984). Interruption of phonological coding in conduction aphasia. *Brain and Language*, 22, 266-291.
- Fromm, D. (1981). *Investigation of movement EMG parameters in apraxia of speech*. Unpublished masters thesis, University of Wisconsin, Madison.
- Fromm, D., Abbs, J. H., McNeil, M. R., & Rosenbek, J. C. (1982). Simultaneous perceptual-physiological method for studying apraxia of speech. *Clinical Aphasiology*, 10, 155-171.
- Gandour, J., & Dardarananda, R. (1984). Prosodic disturbance in aphasia: Vowel length in Thai. *Brain and Language*, 23, 206-224.
- Gay, T. (1981). Mechanisms in the control of speech rate. *Phonetica*, 38, 148-158.
- Gay, T., & Hirose, H. (1973). Effects of speaking rate on labial consonant production. *Phonetica*, 27, 44-56.
- Gay, T., Ushijima, T., Hirose, H., & Cooper, F. S. (1974). Effects of speaking rate on labial consonant-vowel articulation. *Journal of Phonetics*, 2, 47-63.
- Goffman, L., & Smith, A. (1999). Development and phonetic differentiation of speech movement patterns. *Journal of Experimental Psychology: Human Perception and Performance*, 25, 1-12.
- Goodglass, H., & Kaplan, E. (1972). *The assessment of aphasia and related disorders*. Philadelphia: Lea and Febiger.
- Goodglass, H., & Kaplan, E. (1983). *The assessment of aphasia and related disorders*. Philadelphia: Lea and Febiger.
- Goodglass, H., Quadfasel, F. A., & Timberlake, W. H. (1964). Phrase length and the type and severity of aphasia. *Cortex*, 1, 133-153.

- Gordon, P. A., & Luper, H. L. (1989). Speech disfluencies in nonstutterers: Syntactic complexity and production task effects. *Journal of Fluency Disorders, 14*, 429-445.
- Gordon, P. A., Luper, H. L., & Peterson, H. A. (1986). The effects of syntactic complexity on the occurrence of disfluencies in 5-year old nonstutterers. *Journal of Fluency Disorders, 11*, 151-164.
- Gracco, V. L. (1988). Timing factors in the coordination of speech movements. *Journal of Neuroscience, 8*, 4628-4639.
- Gracco, V. L. (1990). Characteristics of speech as a motor control system. In G. E. Hammond (Ed.), *Cerebral control of speech and limb movements* (pp. 3-28). Amsterdam: Elsevier.
- Gracco, V. L., & Abbs, J. H. (1986). Variant and invariant characteristics of speech movements. *Experimental Brain Research, 65*, 156-166.
- Grosjean, F. (1982). *Life with two languages. An introduction to bilingualism*. Cambridge: Harvard University Press.
- Guy, F. R., Edgley, C. E., Arafat, I., & Allen, D. E. (1987). *Social research methods: Puzzles and solutions*. Boston: Allyn and Bacon.
- Hageman, C. F., Robin, D. A., Moon, J. B., & Folkins, J. W. (1994). Oral motor tracking in normal and apraxic speakers. *Clinical Aphasiology, 22*, 219-229.
- Hardcastle, W. J., Morgan Barry, R. A., & Clark, C. J. (1985). Articulatory and voicing characteristics of adult dysarthric and verbal dyspraxic speakers: An instrumental study. *British Journal of Disorders of Communication, 20*, 249-270.
- Hardison, D., Marquardt, T. P., & Peterson, H. A. (1977). Effects of selected linguistic variables on apraxia of speech. *Journal of Speech and Hearing Research, 20*, 334-343.

- Harmes, S., Daniloff, R., Hoffman, P., Lewis, J., Kramer, M., & Absher, R. (1984). Temporal and articulatory control of fricative articulation by speakers with Broca's aphasia. *Journal of Phonetics*, 12, 367-385.
- Harris, M. S., & Umeda, N. (1974). Effect of speaking mode on temporal factors in speech: Vowel duration. *Journal of the Acoustical Society of America*, 56, 1016-1018.
- Haxby, J. V., Grady, C. L., Ungerleider, L. G., & Horwitz, B. (1991). Mapping the functional neuroanatomy of the intact human brain with brain work imaging. *Neuropsychologia*, 29, 539-555.
- Hirose, H. (1986). Pathophysiology of motor speech disorders (dysarthrias). *Folia Phoniatica*, 38, 61-88.
- Hodge, M. (1993). Assessment and treatment of a child with a developmental speech disorder: A biological-behavioral perspective. *Seminars in Speech and Language*, 14, 2, 128-141.
- Hoit-Dalgaard, J., Murry, T., & Kopp, H. G. (1983). Voice onset time production and perception in apraxic subjects. *Brain and Language*, 20, 329-339.
- Hughes, O. M., & Abbs, J. H. (1976). Labial-mandibular coordination in the production of speech: Implications for the operation of motor equivalence. *Phonetica*, 33, 199-221.
- Ingram, D. (1976). *Phonological disability in children*. London: Edward Arnold.
- Itoh, M., & Sasanuma, S. (1984). Articulatory movements in apraxia of speech. In J. C. Rosenbek, M. R. McNeil, & A. E. Aronson (Eds.), *Apraxia of Speech: Physiology-Acoustics-Linguistics-Management* (pp. 135-166). San Diego: College Hill Press.

- Itoh, M., Sasanuma, S., Hirose, H., Yoshioka, H., & Ushijima, T. (1980). Abnormal articulatory dynamics in a patient with apraxia of speech: X-ray microbeam observation. *Brain and Language, 11*, 66-75.
- Itoh, M., Sasanuma, S., Tatsumi, I., & T. Kobayashi, Y. (1979). Voice onset time characteristics of apraxia of speech. *Annual Bulletin No. 13 Research Institute of Logopedics and Phoniatrics* (pp.123-132). Tokyo: University of Tokyo.
- Itoh, M., Sasanuma, S., Tatsumi, I., Murakami, S., Fukusako, Y., & Suzuki, T. (1982). Voice onset time characteristics in apraxia of speech. *Brain and Language, 17*, 193-210.
- Itoh, M., Sasanuma, S., & Ushijima, T. (1979). Velar movements during speech in a patient with apraxia of speech. *Brain and Language, 7*, 227-239.
- Janssen, P., & Wieneke, G. (1987). The effects of fluency inducing conditions on the variability in the duration of laryngeal movements during stutterers' fluent speech. In H. F. M. Peters, & W. H. Hulstijn (Eds.), *Speech motor dynamics in stuttering* (pp. 337-344). Wien: Springer-Verlag.
- Jaric, S., Corcos, D. M., Argarwal, G. C., & Gottlieb, G. L. (1993). Principles for learning single-joint movements, II: Generalizing a learned behavior. *Experimental Brain Research, 94*, 514-521.
- Johns, D. F., & Darley, F.L. (1970). Phonemic variability in apraxia of speech. *Journal of Speech and Hearing Research, 13*, 556-583.
- Junqué, C., Vendrell, P., & Vendrell, J. (1995). Differential impairments and specific phenomena in 50 Catalan-Spanish bilingual aphasic patients. In M. Paradis (Ed.), *Aspects of bilingual aphasia* (pp. 177-209). Oxford: Elsevier Science.
- Just, M. A., & Carpenter, P. A. (1992). A capacity theory of comprehension: Individual differences in working memory. *Psychological Review, 99*, 1, 122-149.

- Kahneman, D. (1973). *Attention and effort*. Englewood Cliffs, NJ: Prentice-Hall Inc.
- Kamhi, A. G. (1985). Questioning the value of large N, multivariate studies: A response to Schery (1985). *Journal of Speech and Hearing Disorders*, 50, 288-289.
- Kamhi, A. G., Catts, H. W., & Davis, M. K. (1984). Management of sentence production demands. *Journal of Speech and Hearing Research*, 27, 329-338.
- Kay Elemetrics Corporation. (1994). Computerized Speech Lab (Version 5.X) [Computer software]. Lincoln Park: Kay Elemetrics Corporation.
- Keller, E. (1990). Speech motor timing. In W. J. Hardcastle, & A. Marchal (Eds.), *Speech production and speech modeling* (pp. 343-364). Netherlands: Kluwer Academic Publishers
- Kelso, J. A. S., & Tuller, B. (1981). Toward a theory of apractic syndromes. *Brain and Language*, 12, 224-245.
- Kelso, J. A. S., & Tuller, B. (1983). "Compensatory articulation" under conditions of reduced afferent information: A dynamic formulation. *Journal of Speech and Hearing Research*, 26, 217-224.
- Kelso, J. A. S., Tuller, B., & Harris, K. S. (1983). A "dynamic" pattern perspective on the control and coordination of movement. In P. F. MacNeilage (Ed.), *The production of speech* (pp. 137-173). New York: Springer-Verlag.
- Kempen, G., & Hoenkamp, E. (1987). An incremental procedural grammar for sentence formulation. *Cognitive Science*, 11, 201-258.

- Kent, R. D. (1990). The acoustic and physiological characteristics of neurologically impaired speech movements. In W. J. Hardcastle, & A. Marchal (Eds.), *Speech Production and Speech Modelling* (pp. 365-401). Netherlands: Kluwer Academic Publishers.
- Kent, D., & Adams, G. (1989). The concept and measurement of coordination in speech disorders. In S.S. Wallace (Ed.), *Perspectives on the coordination of movement* (pp. 415-449). North-Holland: Elsevier Science Publishers.
- Kent, R. D., Adams, S. G., & Turner, G.S. (1996). Models of speech production. In N. J. Lass (Ed.), *Principles of experimental phonetics* (pp. 3-45). St Louis: Mosby.
- Kent, R. D., & Forner, L. L. (1980). Speech segment durations in sentence recitations by children and adults. *Journal of Phonetics*, 8, 157-168.
- Kent, R. D., & McNeil, M. R. (1987). Relative timing of sentence repetition in apraxia of speech and conduction aphasia. In J. H. Ryalls (Ed.), *Phonetic approaches to speech production in aphasia and related disorders* (pp. 181-220). Boston: College-Hill Press.
- Kent, R. D., & Minifie, F. D. (1977). Coarticulation in speech production models. *Journal of Phonetics*, 5, 115-133.
- Kent, R. D., & Rosenbek, J. C. (1983). Acoustic patterns of apraxia of speech. *Journal of Speech and Hearing Research*, 26, 231-249.
- Kertesz, A. (1982). *Western Aphasia Battery*. New York: Grune & Stratton.
- Kessinger, R.H., & Blumstein, S.E. (1998). Effects of speaking rate on voice-onset time and vowel production. *Journal of Phonetics*, 26, 117-128.
- Klapp, S. T., Anderson, W. G., & Berrian, R. W. (1973). Implicit speech in reading, reconsidered. *Journal of Experimental Psychology*, 100, 368-374.

- Klein, D., Zatorre, R. J., Milner, B., Meyer, E., & Evans, A. C. (1995). The neural substrates of bilingual language processing: Evidence from positron emission tomography. In M. Paradis (Ed.), *Aspects of bilingual aphasia* (pp. 23-36). Oxford: Elsevier Science.
- Kluender, K. R., Diehl, R. L., & Wright, B. A. (1988). Vowel-length differences before voiced and voiceless consonants: An auditory explanation. *Journal of Phonetics*, *16*, 153-169.
- Kohn, S. (1984). The nature of the phonological disorder in conduction aphasia. *Brain and Language*, *23*, 97-115.
- Ladefoged, P. (1980). Articulatory parameters. *Language and Speech*, *23*, 25-30.
- LaPointe, L. L., & Johns, D. F. (1975). Some phonemic characteristics in apraxia of speech. *Journal of Communication Disorders*, *8*, 259-269.
- Lebrun, Y. (1989). The history of a concept. In P. Square-Storer (Ed.), *Acquired apraxia of speech in aphasic adults* (pp. 3-19). Hillsdale: Lawrence Erlbaum Associates.
- Leedy, P. D. (1993). *Practical research: Planning and design*. New York: Mac Millan Publishing Company.
- Levelt, W. (1989). *Speaking: From intention to articulation*. Cambridge, MA: IT Press.
- Levelt, W. (1992). Accessing words in speech production: Stages, processes and representations. *Cognition*, *42*, 1-22.
- Liotti, M., Gay, C. T., & Fox, P. T. (1994). Functional imaging and language: Evidence from positron emission tomography. *Journal of Clinical Neurophysiology*, *11*, 175-190.

- Lisker, L., & Abramson, A. S. (1964). A cross language study of voicing in initial stops: Acoustical measurements. *Word, 20*, 384-422.
- Löfqvist, A., & Yoshioka, H. (1981). Interarticulator programming in obstruent production. *Phonetica, 38*, 21-34.
- Lubker, J., & Gay, T. (1981). Spatio-temporal goals: Maturational and cross-linguistic variables. In S. Grillner, B. Lindblom, J. Lubker, & A. Persson (Eds.), *Speech Motor Control* (pp. 205-210). Oxford: Pergamon Press.
- Ludlow, C. L., Conner, N. P., & Bassich, C. J. (1987). Speech timing in Parkinson's and Huntington's Disease. *Brain and Language, 32*, 195-214.
- MacNeilage, P. F. (1980). Speech Production. *Language and Speech, 23*, 3-23.
- MacNeilage, P. F. (1983). *The production of speech*. New York: Springer-Verlag
- MacWhinney, B., Bates, E., & Kliegl, R. (1984). Cues validity and sentence interpretation in English, German and Italian. *Journal of Verbal Learning and Verbal Behavior, 23*, 127-150.
- Magill, R. A. (2001). *Motor Learning: Concepts and Applications*. Boston: McGraw-Hill Companies, Inc.
- Maner, K. J., Smith, A., & Grayson, L. (2000). Influences of utterance length and complexity on speech motor performance in children and adults. *Journal of Speech and Hearing Research, 43*, 560-573.
- Martin, A. D. (1974). Some objections to the term apraxia of speech. *Journal of Speech and Hearing Disorders, 39*, 53-64.
- Martin, A. D., & Rigrodsky, S. (1974a). An investigation of phonological impairment in aphasia, Part 1. *Cortex, 10*, 317-328.

- Martin, A. D., & Rigrodsky, S. (1974b). An investigation of phonological impairment in aphasia, Part 2: Distinctive feature analysis of phonemic commutation errors in aphasia. *Cortex*, 10, 329-346.
- Martin, A. D., Wasserman, N. H., Gilden, L., Gerstman, L., & West, J. A. (1975). A process model of repetition in aphasia: An investigation of phonological and morphological interactions in aphasic error performance. *Brain and Language*, 2, 434-450.
- Masterson, J. J., & Kamhi, A.G. (1992). Linguistic trade-offs in school-age children with and without language disorders. *Journal of Speech and Hearing Research*, 35, 1064-1075.
- Maxwell, N. (1984). *From knowledge to wisdom: A revolution in the aims and method of science*. Oxford: Basil Blackwell.
- McNeil, M. R. (1993). *Apraxic and aphasic speech production: Clinical and theoretical advances*. Paper presented at University of Pretoria, Pretoria, South Africa.
- McNeil, M. R., & Adams, S. (1991). A comparison of speech kinematics among apraxic, conduction aphasic, ataxic dysarthric, and normal geriatric speakers. *Clinical Aphasiology*, 18, 279-294.
- McNeil, M. R., Caliguiri, M., & Rosenbek, J. C. (1989). A comparison of labiomandibular kinematic durations, displacements, velocities, and dysmetrias in apraxic and normal adults. *Clinical Aphasiology*, 17, 173-193.
- McNeil, M. R., Doyle, P. J., & Wambaugh, J. (2000). Apraxia of speech: A treatable disorder of motor planning and programming. In S. E. Nadeau, L. J. Gonzalez Rothi, & B. Crosson (Eds.), *Aphasia and language: Theory to practice* (pp. 221-265). New York: The Guilford Press.

- McNeil, M. R., Hashi, M., & Southwood, H. (1994). Acoustically derived perceptual evidence for coarticulatory deficits in conduction aphasia and apraxia of speech. *Clinical Aphasiology*, 22, 203-218.
- McNeil, M. R., Hashi, M., & Tseng, C. H. (1991b). *Effects of concurrent finger tapping on bilabial kinematics in conduction aphasia*. Paper presented to the Academy of Aphasia, Rome, Italy.
- McNeil, M. R., & Kent, R. D. (1990). Motoric characteristics of adult aphasic and apraxic speakers. In G. E. Hammond (Ed.), *Cerebral control of speech and limb movements* (pp. 349-386). North-Holland: Elsevier Science Publishers.
- McNeil, M. R., Liss, J. M., Tseng, C., & Kent, R. D. (1990a). Effect of speech rate on the absolute and relative timing of apraxic and conduction aphasic sentence production. *Brain and Language*, 38, 135-158.
- McNeil, M. R., Odell, K. H., Miller, S. B., & Hunter, L. (1995). Consistency, variability, and approximation for successive speech repetitions among apraxic, conduction aphasic, and dysarthric speakers. *Clinical Aphasiology*, 23, 39-55.
- McNeil, M. R., Odell, K., & Tseng, C. H. (1991a). Toward the integration of resource allocation into a general theory of aphasia. *Clinical Aphasiology*, 20, 21-39.
- McNeil, M. R., Robin, D. A., & Schmidt, R. A. (1997). Apraxia of speech: Definition, differentiation, and treatment. In M. R. McNeil (Ed.), *Clinical management of sensorimotor speech disorders* (pp. 311-344). New York: Thieme.
- McNeil, M. R., Weismer, G., Adams, S., & Mulligan, M. (1990b). Oral structure nonspeech motor control in normal, dysarthric, aphasic and apraxic speakers: Isometric force and static position control. *Journal of Speech and Hearing Research*, 33, 255-268.

- Mercaitis, P. M. (1983). *Some temporal characteristics of imitative speech in non brain-injured, aphasic and apraxic adults*. Unpublished doctoral dissertation, University of Massachusetts, Amherst.
- Miller, J. F. (1973). Sentence imitation in pre-school children. *Language and Speech*, 16, 1-14.
- Miller, N. (2001). Dual or duel route? *Aphasiology*, 15, 1, 62-67.
- Miller, N. (2002). The neurological bases of apraxia of speech. *Seminars in Speech and Language*, 22, 223-230.
- Mlcoch, A. G., & Noll, J. D. (1980). Speech production models as related to the concept of apraxia of speech. In N.J. Lass (Ed.), *Speech and Language: Advances in basic research and practice* (pp. 201-238). New York: Academic Press.
- Moll, K. L., Zimmermann, G. N., & Smith, A. (1977). The study of speech production as a human neuromotor system. In M. Sawashima, & F. S. Cooper (Eds.), *Dynamic aspects of speech production* (pp. 107-127). Tokyo: University of Tokyo Press.
- Montgomery, M. M., Montgomery, A. A., & Stephens, M. I. (1978). Sentence repetition in preschoolers: Effects of length, complexity and word familiarity. *Journal of Psycholinguistic Research*, 7, 435-452.
- Netsell, R. (1982). Speech motor control and selected neurologic disorders. In S. Grillner, B. Lindblom, J. Lubker, & A. Persson (Eds.), *Speech motor control* (pp. 247-262). Oxford: Pergamon Press.
- Netsell, R. (1984). A neurological view of the dysarthrias. In J.R. McNeil, J.C. Rosenbek & A.E. Aronson (Eds.), *The dysarthrias: Physiology, acoustics, perception, management* (pp.1-36). California: College-Hill Press.

- Odell, K., McNeil, M. R., Rosenbek, J. C., & Hunter, L. (1991a). Perceptual characteristics of vowel and prosody production in apraxic, aphasic, and dysarthric speakers. *Journal of Speech and Hearing Research, 34*, 67-80.
- Odell, K., McNeil, M. R., Rosenbek, J. C., & Hunter, L. (1991b). A perceptual comparison of prosodic features in apraxia of speech and conduction aphasia. *Clinical Aphasiology, 19*, 295-306.
- Ojemann, G .A. (1983). Brain organization for language from the perspective of electrical stimulation mapping. *The Behavioral and Brain Sciences, 6*, 2, 189-230.
- Ojemann, G. A., & Whitaker, H. A. (1978). The bilingual brain. *Archives of Neurology, 35*, 409-412.
- Oller, D. K., & MacNeilage, P. F. (1983). Development of speech production: Perspectives from natural and perturbed speech. In P. F. MacNeilage (Ed.), *The production of speech* (pp. 91-108). New York: Springer-Verlag.
- Ostry, D. J., & Munhall, K. G. (1985). Control of rate and duration of speech movements. *Journal of the Acoustical Society of America, 77*, 640-648.
- Paradis, M. (1977). Bilingualism and aphasia. In H. Whitaker, & H. A. Whitaker (Eds.), *Studies in neurolinguistics, volume 3* (pp. 65-121). New York: Academic Press.
- Paradis, M. (1987). *The assessment of bilingual aphasia*. Hillsdale, New Jersey: Lawrence Erlbaum Associates.
- Paradis, M. (1989). Bilingual and polyglot aphasia. In F. Boller, & J. Grafman (Eds.), *Handbook of neuropsychology, Volume 2* (pp. 117-140). Amsterdam: Elsevier.
- Paradis, M. (1990). Language lateralization in bilinguals: Enough already! *Brain and Language, 39*, 576-586.

- Paradis, M. (1992). The Loch Ness Monster approach to bilingual language lateralization: A response to Berquier and Ashton. *Brain and Language*, 43, 534-537.
- Paradis, M. (1993). Multilingualism and aphasia. In G. Blanken, J. Dittmann, H. Grimm, J. C. Marshall, & C. W. Wallesch (Eds.), *Linguistic disorders and pathologies: An international handbook* (pp. 278-288). Berlin: Walter de Gruyter.
- Paradis, M. (1995a). Introduction: The need for distinctions. In M. Paradis (Ed.), *Aspects of Bilingual Aphasia* (pp. 1-9). United Kingdom: Elsevier Science Ltd.
- Paradis, M. (1995b). Epilogue: Bilingual aphasia 100 years later: Consensus and controversies. In M. Paradis (Ed.), *Aspects of bilingual aphasia* (pp. 211-223). United Kingdom: Elsevier Science Ltd.
- Paradis, M. (1998). *Differential use of cerebral mechanisms in various bilingual populations: Implications for rehabilitation*. Paper presented at 8th International Aphasia Rehabilitation Conference, Kwa Maritane, South Africa.
- Peterson, G. E., & Lehiste, I. (1960). Duration of syllable nuclei in English. *Journal of the Acoustical Society of America*, 24, 693-703.
- Raichle, M. E. (1989). Developing a functional anatomy of the human brain with positron emission tomography. *Current Neurology*, 9, 161-178.
- Ramig, L. A. (1983). Effects of physiological aging on speaking and reading rates. *Journal of Communication Disorders*, 16, 217-226.
- Robin, D. A., Bean, C., & Folkins, J. W. (1989). Lip movement in apraxia of speech. *Journal of Speech and Hearing Research*, 8, 512-523.

- Robin, D. A., Solomon, N. P., Moon, J. B., & Folkins, J. W. (1997). Nonspeech assessment of the speech production mechanism. In M. R. McNeil (Ed.), *Clinical management of sensorimotor speech disorders* (pp. 49-62). New York: Thieme.
- Rochon, E., Caplan, D., & Waters, G. (1990). Short-term memory processes in patients with apraxia of speech: Implications for the nature and structure of the auditory verbal short-term memory system. *Journal of Neurolinguistics*, 5, 237-264.
- Rogers, M. A., & Spencer, K. A. (2001). Spoken word production without assembly: Is it possible? *Aphasiology*, 15, 1, 68-73.
- Rogers, M. A., & Storkel, H. L. (1998). Reprogramming phonologically similar utterances: The role of phonetic features in pre-motor encoding. *Journal of Speech, Language and Hearing Research*, 41, 258-274.
- Rogers, M. A., & Storkel, H. L. (1999). Planning speech one syllable at a time: The reduced buffer capacity hypothesis in apraxia of speech. *Aphasiology*, 13, 793-805.
- Romaine, S. (1995). *Bilingualism*. Oxford UK: Blackwell Publishers.
- Rose, D. J. (1997). *A multi-level approach to the study of motor control and learning*. Boston: Allyn & Bacon.
- Rosenbek, J. C. (2001). Darley and apraxia of speech in adults. *Aphasiology*, 15, 3, 261-273.
- Rosenbek, J. C., Kent, R. D., & LaPointe, L. L. (1984). Apraxia of speech: An overview and some perspectives. In J. C. Rosenbek, M. R. McNeil, & A. E. Aronson (Eds.), *Apraxia of speech: Physiology-acoustics-linguistics-management* (pp.1-72). San Diego: College Hill Press.

- Rosenbek, J. C., & McNeil, M. R. (1991). A discussion of classification in motor speech disorders: Dysarthria and apraxia of speech. In C. A. Moore, K. M Yorkston, & D. R. Beukelman (Eds.), *Dysarthria and apraxia of speech: Perspectives on management* (pp. 289-295). Baltimore: Paul H. Brookes Publishing Co., Inc.
- Ryalls, J. H. (1981). Motor aphasia: Acoustic correlates of phonetic disintegration of vowels. *Neuropsychologia*, *19*, 365-374.
- Ryalls, J. H. (1982). Intonation in Broca's aphasia. *Neuropsychologia*, *20*, 355-360.
- Ryalls, J. H. (1984). Some acoustic aspects of fundamental frequency of CVC utterances in aphasia. *Phonetica*, *41*, 103-111.
- Ryalls, J. H. (1986). An acoustic study of vowel production in aphasia. *Brain and Language*, *29*, 48-67.
- Ryalls, J. H. (1987). Vowel production in aphasia: Towards an account of the consonant-vowel dissociation. In J. H. Ryalls (Ed.), *Phonetic approaches to speech production in aphasia and related disorders* (pp. 23-44). Boston: College-Hill Press.
- Sands, E. S., Freeman, F. J., & Harris, K. S. (1978). Progressive changes in articulatory patterns in verbal apraxia: A longitudinal case study. *Brain and Language*, *6*, 97-106.
- Schmidt, R. A. (1975). A schema theory of discrete motor skill motor learning. *Psychological Review*, *82*, 225-260.
- Schmidt, R. A. (1982). The Schema Concept. In J. A. S. Kelso (Ed.), *Human motor behaviour: An introduction* (pp. 219-235). London: Lawrence Erlbaum Associates.
- Schmidt, R. A. (1988). *Motor control and learning: A behavioral emphasis*. Champaign, IL: Human Kinetics.

- Schultz, W., & Romo, R. (1992). Role of primate basal ganglia and frontal cortex in the internal generation of movements, I: Preparatory activity in the anterior striatum. *Experimental Brain Research*, 91, 363-384.
- Seddoh, S., Robin, D. A., Hageman, C., Sim, H. S., Moon, J. B., & Folkins, J. W. (1996a). Temporal control in apraxia of speech: An acoustic investigation of token-to-token variability. *Clinical Aphasiology*, 24, 65-81.
- Seddoh, S., Robin, D. A., Sim, H. S., Hageman, C., Moon, J. B., & Folkins, J. W. (1996b). Speech timing in apraxia of speech versus conduction aphasia. *Journal of Speech and Hearing Research*, 39, 590-603.
- Shankweiler, D., & Harris, K. S. (1966). An experimental approach to the problem of articulation in aphasia. *Cortex*, 2, 277-297.
- Shankweiler, D., Harris, K. S., & Taylor, M. L. (1968). Electromyographic studies of articulation in aphasia. *Archives of Physical Medicine and Rehabilitation*, 1, 1-8.
- Sharkey, S. G., & Folkins, J. W. (1985). Variability of lip and jaw movements in children and adults: Implications for the development of speech motor control. *Journal of Speech and Hearing Research*, 28, 8-15.
- Sharwood-Smith, M., & Kellerman, E. (1986). Crosslinguistic influence in second language acquisition: An introduction. In E. Kellerman, & M. Sharwood-Smith (Eds.), *Crosslinguistic Influence and Second Language Acquisition* (pp. 1-9). Oxford: Pergamon Press.
- Shea, C. M., Shebilske, W. C., & Worchel, S. (1993). *Motor learning and control*. Englewood Cliffs, N.J.: Prentice Hall.

- Shewan, C. M., Leeper, H. A. Jr., & Booth, J. C. (1984). An analysis of voice onset time (VOT) in aphasic and normal subjects. In J. C. Rosenbek, M. R. McNeil, & A. Aronson (Eds.), *Apraxia of speech: Physiology, acoustics, linguistics, management* (pp. 197-220). San Diego: College Hill Press.
- Shriberg, L. D., & Kent, R. D. (1982). *Clinical Phonetics*. New York: John Wiley & Sons.
- Siegel, G.M., & Spradlin, J.E. (1985). Therapy and research. *Journal of Speech and Hearing Disorders*, 15, 226-230.
- Silverman, F. H. (1993). *Research design and evaluation in speech-language-pathology and audiology*. New Jersey: Prentice Hall, Inc.
- Silverman, S., & Bernstein Ratner, N. (1997). Syntactic complexity, fluency and accuracy of sentence imitation in adolescents. *Journal of Speech, Language and Hearing Research*, 40, 95-106.
- Smit, G. J. (1983). *Navorsingsmetodes in die gedragswetenskappe*. Pretoria: HAUM Opvoedkundige Uitgewers.
- Smith, A. (1992a). The control of orofacial movements in speech. *Critical Reviews in Oral Biology and Medicine*, 3, 3, 233-267.
- Smith, A., & Goffman, L. (1998). Stability and patterning of speech movement sequences in children and adults. *Journal of Speech and Hearing Research*, 41, 18-30.
- Smith, A., Goffman, L., & Stark, R. E. (1995). Speech motor development. *Seminars in Speech and Language*, 16, 87-99.
- Smith, B. L. (1978). Temporal aspects of English speech production: A developmental perspective. *Journal of Phonetics*, 6, 37-67.

- Smith, B. L. (1992b). Relationships between duration and temporal variability in children's speech. *Journal of the Acoustical Society of America*, 91, 4, 2165-2174.
- Smith, B. L. (1994). Effects of experimental manipulations and intrinsic contrasts on relationships between duration and temporal variability in children's and adults' speech. *Journal of Phonetics*, 22, 155-175.
- Smith, B. L. (1995). Variability of lip and jaw movements in the speech of children and adults. *Phonetica*, 52, 307-316.
- Smith, B. L., & Kenney, M. K. (1994). Variability control in speech production tasks performed by adults and children. *Journal of the Acoustical Society of America*, 96, 699-705.
- Smith, B. L., Sugarman, M. D., & Long, S. H. (1983). Experimental manipulation of speaking rate for studying temporal variability in children's speech. *Journal of the Acoustical Society of America*, 74, 3, 744-749.
- Smith, C. S., & Van Kleeck, A. (1986). Linguistic complexity and performance. *Journal of Child Language*, 13, 389-408.
- Square-Storer, P. A., & Apeldoorn, S. (1991). An acoustic study of apraxia of speech in patients with different lesion loci. In C. A. Moore, K. M. Yorkston, & D. R. Beukelman (Eds.), *Dysarthria and apraxia of speech: Perspectives on management* (pp. 271-288). Baltimore: Paul H. Brookes Publishing Co.
- Square-Storer, P. A., Roy, E. A., & Hogg, S. C. (1990). The dissociation of aphasia from apraxia of speech, ideomotor limb, and buccofacial apraxia. In G. E. Hammond (Ed.), *Cerebral control of speech and limb movements* (pp. 451-476). Amsterdam: Elsevier Science Publishers.

- Stelmach, G. E. (1982). Information-processing framework for understanding human motor behavior. In J. A. S. Kelso (Ed.), *Human motor behavior: An introduction* (pp. 63-91). London: Lawrence Erlbaum Associates.
- Strand, E. A. (1987). *Acoustic and response time measures in utterance production: A comparison of apraxic and normal speakers*. Unpublished doctoral dissertation. University of Wisconsin, Madison.
- Strand, E. A., & McNeil, M. R. (1987). Evidence for a motor performance deficit versus a misapplied rule system in temporal organization of utterances in apraxia of speech. *Clinical Aphasiology*, 17, 260-270.
- Strand, E. A., & McNeil, M. R. (1996). Effects of length and linguistic complexity on temporal acoustic measures in apraxia of speech. *Journal of Speech and Hearing Research*, 39, 1018-1033.
- Sussman, H., Marquardt, T., Hutchinson, J., & MacNeilage, P. (1986). Compensatory articulation in Broca's aphasia. *Brain and Language*, 27, 56-74.
- Thompson, C. K. (1989). Articulation disorders in the child with neurogenic pathology. In J. L. Northern (Ed.), *Study guide for handbook of speech-language pathology and audiology* (pp.132-153). Toronto: B.C. Decker Inc.
- Tingley, B., & Allen, G. (1975). Development of speech timing control in children. *Child Development*, 46, 186-194.
- Trost, J. E., & Canter, G. J. (1974). Apraxia of speech in patients with Broca's aphasia: A study of phoneme production accuracy and error patterns. *Brain and Language*, 1, 63-79.
- Tseng, C. H., McNeil, M. R., Adams, S., & Weismer, G. (1990). *Effects of speaking rate on bilabial (a)synchrony in neurogenic populations*. Paper presented at the Annual Convention of American Speech-Language-Hearing Association, Seattle.

- Tseng, C., McNeil, M.R, & Milenkovic, P. (1993). An investigation of attention allocation deficits in aphasia. *Brain and Language*, 45, 276-296.
- Tuller, B., Fitch, H. L., & Turvey, M. T. (1982). The Bernstein perspective: II. The concept of muscle linkage or coordinative structure. In J. A. S. Kelso (Ed.), *Human Motor Behavior: An introduction* (pp. 253-270). London: Lawrence Erlbaum Associates.
- Tuller, B., & Story, R. (1987). Anticipatory coarticulation in aphasia. In J. Ryalls (Ed.), *Phonetic approaches to speech production in aphasia and related disorders* (pp. 243-260). San Diego: College-Hill Press.
- Tyler, A. A., & Watterson, T. L. (1991). VOT as an indirect measure of laryngeal function. *Seminars in Speech and Language*, 12, 2, 131-141.
- Umeda, N. (1974). Effect of speaking mode on temporal factors in speech: Vowel duration. *Journal of the Acoustical Society of America*, 56, 3, 1016-1018.
- Van der Merwe, A. (1985). *Treatment program for developmental apraxia of speech and other speech disorders* (title translated). Pretoria: University of Pretoria.
- Van der Merwe, A. (1986). *The motor planning of speech in verbal apraxia* (title translated). Unpublished doctoral dissertation. University of Pretoria, Pretoria.
- Van der Merwe, A. (1997). A theoretical framework for the characterization of pathologic speech sensorimotor control. In M. R. McNeil (Ed.), *Clinical management of sensorimotor speech disorders* (pp. 1-25). New York: Thieme.
- Van der Merwe, A. (2002). *The four-level framework for the characterization of pathological speech sensorimotor control: Applications to treating apraxia of speech*. Keynote address presented at the 32nd Annual Clinical Aphasiology Conference, Ridgedale, MO.

- Van der Merwe, A., & Grimbeek, R. J. (1990). A comparison of the influence of certain contextual factors on the symptoms of acquired apraxia of speech and developmental apraxia of speech (title translated). *South African Journal of Communication Disorders*, 37, 27-34.
- Van der Merwe, A., & Tesner, H. (2000). Apraxia of speech in a bilingual speaker: Perceptual characteristics and generalization of non-language specific treatment. *South African Journal of Communication Disorders*, 47, 79-89.
- Van der Merwe, A., Uys, I. C., Loots, J. M., & Grimbeek, R. J. (1987). The influence of certain contextual factors on the perceptual symptoms of apraxia of speech (title translated). *South African Journal of Communication Disorders*, 34, 10-22.
- Van der Merwe, A., Uys, I. C., Loots, J. M., & Grimbeek, R. J. (1988). Perceptual symptoms of apraxia of speech: Indications of the nature of the disorder (title translated). *South African Journal of Communication Disorders*, 34, 45-54.
- Van der Merwe, A., Uys, I. C., Loots, J. M., Grimbeek, R.J., & Jansen, L. P. C. (1989). The influence of certain contextual factors on voice onset time, vowel duration and utterance duration in apraxia of speech (title translated). *South African Journal of Communication Disorders*, 36, 29-41
- Van Riper, C., & Emerick, L. (1984). *Speech correction: An introduction to speech pathology and audiology*. London: Prentice-Hall International, Inc.
- Varley, R., & Whiteside, S. P. (2001). What is the underlying impairment in acquired apraxia of speech? *Aphasiology*, 15, 1, 39-49.
- Varley, R., Whiteside, S. P., & Luff, H. (1999). Dual-route speech encoding in normal and apraxic speakers: Some durational evidence. *Journal of Medical Speech and Language Pathology*, 7, 127-132.
- Walsh, T. (1984). Modelling temporal relations within English syllables. *Journal of Phonetics*, 12, 29-35.

- Weinreich, A. (1968). *Languages in contact*. The Hague: Mouton.
- Wertz, R. T., LaPointe, L. L., & Rosenbek, J. C. (1984). *Apraxia of speech in adults: The disorder and its management*. Boston: Allyn and Bacon.
- Whitaker, H.A. (1989). Bilingualism and neurolinguistics: A note on the issues. *Brain and Language*, 36, 1-2.
- Whiteside, S. P., & Varley, R. A. (1996). An acoustic study of phonation in apraxia: A single case study. *Proceedings of the Institute of Acoustics*, 18, 323-330.
- Whiteside, S. P., & Varley, R. A. (1998). A reconceptualisation of apraxia of speech: A synthesis of evidence. *Cortex*, 34, 221-231.
- Wickens, C.D. (1980). The structure of processing resources. In R. Nickerson (Ed.), *Attention and performance VII* (pp 239-257). Hillsdale, N.J: Erlbaum.
- Wickens, C.D. (1992). *Engineering psychology and human performance*. New York: Harper Collins.
- Wieneke, G., & Janssen, J. (1987). Effect of speaking rate on speech timing variability. In H. F. M. Peters, & W. H. Hulstijn (Eds.), *Speech motor dynamics in stuttering* (pp. 345-352). Wien: Springer-Verlag.
- Wiener, D., Obler, L. K., & Taylor Sarno, M. (1995). Speech/language management of the bilingual aphasic in a U.S. urban rehabilitation hospital. In M. Paradis (Ed.), *Aspects of bilingual aphasia* (pp. 37-56). United Kingdom: Elsevier Science Ltd.
- Yamadori, A., & Ikumura, G. (1975). Central (or conduction) aphasia in Japanese patients. *Cortex*, 11, 73-82.

- Ziegler, W. (1987). Phonetic realization of phonological contrast in aphasic patients. In J. H. Ryalls (Ed.), *Phonetic approaches to speech production in aphasia and related disorders* (pp. 163-179). Boston: College-Hill Press.
- Ziegler, W. (2001). Apraxia of speech is not a lexical disorder. *Aphasiology*, 25, 1, 74-77.
- Ziegler, W., & Hoole, P. (1989). A combined acoustic and perceptual analysis of the tense-lax opposition in aphasic vowel production. *Aphasiology*, 3, 449-463.
- Ziegler, W., & Von Cramon, D. (1985). Anticipatory coarticulation in apraxia of speech: Acoustic evidence. *Brain and Language*, 26, 117-130.
- Ziegler, W., & Von Cramon, D. (1986). Disturbed coarticulation in apraxia of speech: Acoustic evidence. *Brain and Language*, 29, 34-47.
- Zlatin, M.A. (1974). Voicing contrast: Perceptual and productive voice-onset time characteristics of adults. *Journal of the Acoustical Society of America*, 56, 981-994.