

## Appendix

**THE INTERNATIONAL PHONETIC ALPHABET** (revised to 1993, updated 1996)

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retroflex	Palatal	Vocal	Uvular	Pharyngeal	Glottal
Plosive	p b		t d		t̪ d̪	c j	k g	q G			?
Nasal	m	n̪		n		ɳ	p	ɳ		N	
Trill		R								R	
Tap or Flap			f		r̪						
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	s̪ z̪	ç j	x y	χ ʁ	h ɿ	h̪ f̪
Lateral fricative				ɬ	ɭ						
Approximant		w	v		j	ɻ	ɻ	ɻ	ɻ		
Lateral approximant					ɬ	ɭ	ɭ	ɭ	ɭ		

Where symbols appear in pairs, the one to the right represents a voiced consonant. Shaded areas denote articulations judged impossible.

### **CONSONANTS (NON-BILABIAL)**

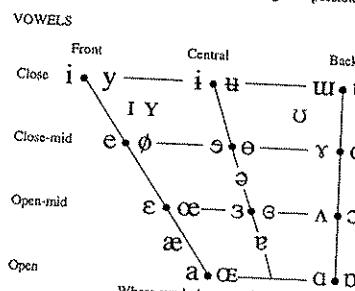
Clicks	Voiced implosives	Ejectives
○ Bilabial	b	Bilabial , Examples:
Dental	d	Dental/alveolar p' Bilabial
! (Post)alveolar	f	Palatal t' Dental/alveolar
† Palatoalveolar	g	Velar k' Velar
‡ Alveolar lateral	g̊	Uvular s' Alveolar fricative

#### OTHER SYMBOLS

<b>M</b>	Voiceless labial-velar fricative	<b>G</b>	Z	Alveolo-palatal fricatives
<b>W</b>	Voiced labial-velar approximant	<b>I</b>		Alveolar lateral flap
<b>U</b>	Voiced labial-palatal approximant	<b>H</b>		Simultaneous <i>f</i> and <i>X</i>
<b>H</b>	Voiceless epiglottal fricative			
<b>S</b>	Voiced epiglottal fricative			Affricates and double articulations can be represented by two symbols joined by a tie bar if necessary.
<b>F</b>	Epiglottal plosive			

**DIACRITICS** Diacritics may be placed above a symbol with a descender, e.g.

o	Voiceless	n̥ s̥	Breathy voiced	b̥ ḁ	Dental	t̥ d̥
	Voiced	g̥ t̥	Creaky voiced	b̥ ḁ	Apical	t̥ d̥
h	Aspirated	h̥ d̥	Linguolabial	t̥ d̥	Laminal	t̥ d̥
,	More rounded	ɔ̥	Labialized	t̥ w̥ d̥ w̥	Nasalized	ɛ̥
e	Less rounded	ɔ̥	Palatalized	t̥j̥ d̥j̥	Natal release	d̥n̥
*	Advanced	u̥	Velarized	t̥Y̥ d̥Y̥	Lateral release	d̥l̥
-	Retracted	e̥	Pharyngealized	t̥s̥ d̥s̥	No audible release	d̥l̥
x	Centralized	ë̥	Velarized or pharyngealized	t̥		
	Mid-centralized	ë̥	Raised	e̥	(I = voiced alveolar fricative)	
,	Syllabic	n̥	Lowered	e̥	(β = voiced bilabial approximant)	
~	Non-syllabic	ø̥	Advanced Tongue Root	e̥		
~	Rhoticity	ə̥ ḁ	Retracted Tongue Root	e̥		



Where symbols appear in pairs, the one to the right represents a rounded vowel.

## SUPRASEGMENTAL

- Primary stress
- Secondary stress
- ,foundə'tʃen
- Long ē:
- Half-long ē'
- Extra-short ē
- Minor (foot) group
- Major (intonation) group
- Syllabic break .ɪ.ækt
- Linking (absence of a break)

**TONES AND WORD ACCENTS  
LEVEL CONTOUR**

	CONTOUR
Extra high	Rising
High	Falling
Mid	High rising
Low	Low
Extra low	Rising-falling
Downstep	Global fall
Upstep	Global rise

## REFERENCES

- Abaglo, P. and D. Archangeli (1989). Language-particular underspecification: Gengbe /e/ and Yoruba /i/. *Linguistic Inquiry* 20. 457–80.

Abercrombie, D. (1964). Syllable quantity and enclitics in English. In D. Abercrombie, D. B. Fry, P. A. D. McCarthy, N. C. Scott and J. L. M. Trim (eds.) *In honour of Daniel Jones*. London: Longman. 216–22.

(1965). A phonetician's view of verse structure. In D. Abercrombie, *Studies in phonetics and linguistics*. London: Oxford University Press. 16–25.

(1967). *Elements of general phonetics*. Edinburgh: Edinburgh University Press.

Allen, W. S. (1973). *Accent and rhythm: prosodic features of Latin and Greek*. Cambridge: Cambridge University Press.

Anderson, J. M. (1969). Syllabic or non-syllabic phonology. *Journal of Linguistics* 5. 136–43.

(1987). The limits of linearity. In J. M. Anderson and J. Durand (eds.) *Explorations in dependency phonology*. Dordrecht: Foris. 199–220.

Anderson, J. M. and J. Durand (1988). Vowel harmony in Nez Perce. In van der Hulst and Smith (1988a: vol. II). 1–17.

Anderson, J. M. and C. J. Ewen (1987). *Principles of dependency phonology*. Cambridge: Cambridge University Press.

Anderson, J. M. and C. Jones (1974). Three theses concerning phonological representations. *Journal of Linguistics* 10. 1–26.

(1977). *Phonological structure and the history of English*. Amsterdam: North-Holland.

Anderson, S. R. (1973). u-umlaut and Skaldic verse. In S. R. Anderson and P. Kiparsky (eds.) *A Festschrift for Morris Halle*. New York: Holt, Rinehart and Winston. 3–13.

(1976). Nasal consonants and the internal structure of segments. *Language* 52. 326–44.

(1982). The analysis of French schwa: or, how to get something from nothing. *Language* 58. 534–73.

(1984). A metrical interpretation of some traditional claims about quantity and stress. In Aronoff and Oehrle (1984). 83–106.

(1985). *Phonology in the twentieth century: theories of rules and theories of representations*. Chicago: University of Chicago Press.

- (1996). How to put your clitics in their place. *The Linguistic Review* 13. 165–91.
- Aoki, H. (1968). Towards a typology of vowel harmony. *International Journal of American Linguistics* 34. 142–5.
- Archangeli, D. (1984). *Underspecification in Yawelmani phonology and morphology*. Ph.D. dissertation, Massachusetts Institute of Technology.
- (1988a). Aspects of underspecification theory. *Phonology* 5. 183–207.
- (1988b). Extrametricality in Yawelmani. *The Linguistic Review* 4. 101–20.
- (1991). Syllabification and prosodic templates in Yawelmani. *Natural Language and Linguistic Theory* 9. 231–83.
- Archangeli, D. and D. Pulleyblank (1989). Yoruba vowel harmony. *Linguistic Inquiry* 20. 173–217.
- (1994). *Grounded phonology*. Cambridge, Mass.: MIT Press.
- Archibald, J. (ed.) (1997). *Phonological acquisition and phonological theory*. Hillsdale, N.J.: Lawrence Erlbaum.
- Arnason, K. (1980). *Quantity in historical phonology: Icelandic and related cases*. Cambridge: Cambridge University Press.
- (1985). Icelandic word stress and metrical phonology. *Studia Linguistica* 39. 93–129.
- Aronoff, M. and R. T. Oehrle (eds.) (1984). *Language sound structure: studies in phonology presented to Morris Halle by his teacher and students*. Cambridge, Mass.: MIT Press.
- Avery, P. and K. D. Rice (1989). Segment structure and coronal underspecification. *Phonology* 6. 179–200.
- Awedyk, W. (1975). *The syllable theory and Old English phonology*. Wrocław: Ossolineum.
- Baart, J. (1987). *Focus, syntax, and accent placement: towards a rule system for the derivation of pitch accent patterns in Dutch as spoken by humans and machines*. Ph.D. dissertation, University of Leiden.
- Baltaxe, C. A. M. (1978). *Foundations of distinctive feature theory*. Baltimore: University Park Press.
- Bao, Z. (1990). *On the nature of tone*. Ph.D. dissertation, Massachusetts Institute of Technology.
- Basbøll, H. (1999). Syllables in Danish. In van der Hulst and Ritter (1999). 69–92.
- Beckman, M. E. (1986). *Stress and non-stress accent*. Dordrecht: Foris.
- Beckman, M. E. and J. B. Pierrehumbert (1986). Intonational structure in English and Japanese. *Phonology Yearbook* 3. 255–310.
- Bell, A. and J. B. Hooper (eds.) (1978). *Syllables and segments*. Amsterdam: North Holland.
- Bendor-Samuel, John T. (1960). Some problems of segmentation in the phonological analysis of Tereno. *Word* 16. 348–55.
- Benediktsson, H. (1963). Some aspects of Nordic umlaut and breaking. *Language* 39. 409–31.
- Bickmore, L. S. (1995). Accounting for compensatory lengthening in the CV and moraic frameworks. In Durand and Katamba (1995). 119–48.

- Bird, S. (1995). *Computational phonology: a constraint-based approach*. Cambridge: Cambridge University Press.
- Blevins, J. (1995). The syllable in phonological theory. In Goldsmith (1995). 206–44.
- Boas, F. (1947). *Kwakiutl grammar with a glossary of the suffixes*. Transactions of the American Philosophical Society. New Series, Vol. 37, Part 3.
- Bolinger, D. L. (1972). Accent is predictable (if you're a mind-reader). *Language* 48. 633–44.
- (1978). Intonation across languages. In Greenberg (1978). 471–524.
- (1986). *Intonation and its parts: the melody of language*. Stanford: Stanford University Press.
- Booij, G. E. (1995). *The phonology of Dutch*. Oxford: Clarendon Press.
- Borowsky, T. J. (1986). *Topics in the lexical phonology of English*. Ph.D. dissertation, University of Massachusetts, Amherst. Published 1990, New York: Garland.
- (1993). On the Word level. In S. Hargus and E. M. Kaisse (eds.) *Studies in Lexical Phonology*. San Diego: Academic Press. 199–234.
- Boxwell, H. and M. Boxwell (1966). Weri phonemes. In S. A. Wurm (ed.) *Papers in New Guinea linguistics*. Vol. V. Canberra: Australian National University. 77–93.
- Brentari, D. (1995). Sign language phonology: ASL. In Goldsmith (1995). 615–39.
- (1999). *A prosodic model of sign language phonology*. Cambridge, Mass.: MIT Press.
- Brockhaus, W. (1995). Skeletal and suprasegmental structure within Government Phonology. In Durand and Katamba (1995). 180–221.
- Brockhaus, W. (1999). The syllable in German: exploring an alternative. In van der Hulst and Ritter (1999). 169–218.
- Broselow, E. (1995). Skeletal positions and moras. In Goldsmith (1995). 175–205.
- Broselow, E., S.-I. Chen and M. Huffman (1997). Syllable weight: convergence of phonology and phonetics. *Phonology* 14. 47–82.
- Brownman, C. P. and L. Goldstein (1986). Towards an articulatory phonology. *Phonology Yearbook* 3. 219–52.
- (1989). Articulatory gestures as phonological units. *Phonology* 6. 201–51.
- (1992). Articulatory Phonology: an overview. *Phonetica* 49. 155–80.
- Bruce, G. and B. Hermans (1999). Word tone in Germanic languages. In van der Hulst (1999). 605–58.
- Burzio, L. (1994). *Principles of English stress*. Cambridge: Cambridge University Press.
- Cairns, C. E. (1988). Phonotactics, markedness and lexical representation. *Phonology* 5. 209–36.
- Cairns, C. E. and M. H. Feinstein (1982). Markedness and the theory of syllable structure. *Linguistic Inquiry* 13. 193–226.
- Catford, J. C. (1977). *Fundamental problems in phonetics*. Edinburgh: Edinburgh University Press.
- Charette, M. (1990). Licence to govern. *Phonology* 7. 233–53.
- (1991). *Conditions on phonological government*. Cambridge: Cambridge University Press.

- Chomsky, N. and M. Halle (1968). *The sound pattern of English*. New York: Harper and Row.
- Churchward, C. M. (1940). *Rotuman grammar and dictionary*. Sydney: Australasian Medical Publishing Company.
- Clements, G. N. (1977). The autosegmental treatment of vowel harmony. In W. U. Dressler and O. E. Pfeiffer (eds.) *Phonologica 1976*. Innsbruck: Innsbrucker Beiträge zur Sprachwissenschaft. 111–19.
- (1981). Akan vowel harmony: a nonlinear analysis. *Harvard Studies in Phonology* 2. 108–77.
- (1985). The geometry of phonological features. *Phonology Yearbook* 2. 225–52.
- (1988). Toward a substantive theory of feature specification. *Papers from the Annual Meeting of the North East Linguistic Society* 18. 79–93.
- (1989). A unified set of features for consonants and vowels. Ms., Cornell University.
- (1990). The role of the sonority cycle in core syllabification. In J. Kingston and M. Beckman (eds.) *Papers in laboratory phonology I: between the grammar and physics of speech*. Cambridge: Cambridge University Press. 283–333.
- (1991). Vowel height assimilation in Bantu languages. *Proceedings of the Annual Meeting, Berkeley Linguistics Society* 17. 25–64.
- (1992). Phonological primes: gestures or features? *Phonetica* 49. 181–93.
- Clements, G. N. and J. A. Goldsmith (eds.) (1984). *Autosegmental studies in Bantu tone*. Dordrecht: Foris.
- Clements, G. N. and E. V. Hume (1995). The internal organization of speech sounds. In Goldsmith (1995). 245–306.
- Clements, G. N. and S. Keyser (1983). *CV phonology: a generative theory of the syllable*. Cambridge, Mass.: MIT Press.
- Clements, G. N. and E. Sezer (1982). Vowel and consonant disharmony in Turkish. In van der Hulst and Smith (1982b: part 2). 213–55.
- Cohn, A. (1990). *Phonetic and phonological rules of nasalization*. Ph.D. dissertation, University of California at Los Angeles.
- (1993). Nasalisation in English: phonology or phonetics. *Phonology* 10. 43–81.
- Cole, J. (1995). The cycle in phonology. In Goldsmith (1995). 70–113.
- Coleman, J. (1998). *Phonological representations: their names, forms and powers*. Cambridge: Cambridge University Press.
- Collins, B. S. and I. M. Mees (1996). *The phonetics of English and Dutch*. Leiden: E. J. Brill.
- Corrigan, R., F. Eckman and M. Noonan (eds.) (1989). *Linguistic categorization*. Amsterdam: John Benjamins.
- Crothers, J. (1978). Typology and universals of vowel systems. In Greenberg (1978). 93–152.
- Cruttenden, A. (1997). *Intonation*. 2nd edn. Cambridge: Cambridge University Press.
- Cyran, E. (1997). *Resonance elements in phonology: a study in Munster Irish*. Lublin: Wydawnictwo Folium.

- Dauer, R. (1983). Stress-timing and syllable-timing reanalyzed. *Journal of Phonetics* 11. 51–62.
- Davenport, M. and J. Staun (1986). Sequence, segment and configuration: two problems for dependency phonology. In Durand (1986a). 135–59.
- Davis, S. (1985). *Topics in syllable phonology*. Ph.D. dissertation, University of Arizona. Published 1988, New York: Garland.
- (1989). Location of the feature [continuant] in feature geometry. *Lingua* 78. 1–22.
- (1990). The onset as a constituent of the syllable: evidence from Italian. *Papers from the Annual Regional Meeting, Chicago Linguistic Society* 26:2. 71–9.
- (1994). Geminate consonants in moraic phonology. *Proceedings of the West Coast Conference on Formal Linguistics* 13. 32–45.
- De Chene, B. and S. R. Anderson (1979). Compensatory lengthening. *Language* 55. 505–35.
- Dell, F. (1995). Consonant clusters and phonological syllables in French. *Lingua* 95. 5–26.
- Dell, F. and M. Elmedlaoui (1985). Syllabic consonants and syllabification in Imdlawn Tashlhiyt Berber. *Journal of African Languages and Linguistics* 7. 105–30.
- Dikken, M. den and H. G. van der Hulst (1988). Segmental hierarchies. In van der Hulst and Smith (1988a: vol. I). 1–78.
- Dixon, R. M. W. (1980). *The languages of Australia*. Cambridge: Cambridge University Press.
- Dogil, G. (1988). Phonological configurations: natural classes, sonority and syllacticity. In van der Hulst and Smith (1988a: vol. I). 79–103.
- (1999). The phonetic manifestation of word stress in Lithuanian, Polish, German and Spanish. In van der Hulst (1999). 273–311.
- Donegan, P. J. (1973). Bleaching and coloring. *Papers from the Annual Regional Meeting, Chicago Linguistic Society* 9. 386–97.
- Dresher, B. E. and H. G. van der Hulst (1995). Head-dependent asymmetries in phonology. In H. G. van der Hulst and J. M. van de Weijer (eds.) *Leiden in last*. The Hague: Holland Academic Graphics. 401–31.
- (1998). Head-dependent asymmetries in phonology: complexity and visibility. *Phonology* 15. 317–52.
- Dresher, B. E. and A. Lahiri (1991). The Germanic foot: metrical coherence in Old English. *Linguistic Inquiry* 22. 251–86.
- Dressler, W. U., O. E. Pfeiffer and J. R. Rennison (eds.) (1981). *Phonologica 1980*. Innsbruck: Innsbrucker Beiträge zur Sprachwissenschaft.
- Duanmu, S. (1990). *A formal study of syllable, tone, stress and domain in Chinese languages*. Ph.D. dissertation, Massachusetts Institute of Technology.
- Durand, J. (ed.) (1986a). *Dependency and non-linear phonology*. London: Croom Helm.
- Durand, J. (1986b). French liaison, floating segments and other matters in a dependency framework. In Durand (1986a). 161–201.
- Durand, J. and F. Katamba (eds.) (1995). *Frontiers of phonology: atoms, structures, derivations*. London: Longman.

- Ebeling, C. L. (1966). The grammar of literary Avar. *Studia Caucasică* 2. 58–100.
- Echeverría, M. S. and H. Contreras (1965). Araucanian phonemics. *International Journal of American Linguistics* 31. 132–5.
- Ewen, C. J. (1978). The phonology of the diminutive in Dutch: a dependency account. *Lingua* 45. 141–73.
- (1980a). *Aspects of phonological structure, with particular reference to English and Dutch*. Ph.D. dissertation, University of Edinburgh.
- (1980b). The characterisation of glottal stricture in dependency phonology. *York Papers in Linguistics* 8. 35–47.
- (1995). Dependency relations in phonology. In Goldsmith (1995). 570–85.
- Ewen, C. J. and H. G. van der Hulst (1985). Single-valued features and the non-linear analysis of vowel harmony. In H. Bennis and F. H. Beukema (eds.) *Linguistics in the Netherlands 1985*. Dordrecht: Foris. 39–48.
- Farmer, A. L. (1979). Phonological markedness and the sonority hierarchy. *MIT Working Papers in Linguistics* 1. 172–7.
- Ferguson, C. A., L. M. Hyman and J. J. Ohala (eds.) (1975). *Nasálfest: papers from a symposium on nasals and nasalization*. Stanford: Language Universals Project, Stanford University.
- Fikkert, P. (1994). *On the acquisition of prosodic structure*. Ph.D. dissertation, University of Leiden.
- Firth, J. R. (1948). Sounds and prosodies. In Palmer (1970). 1–26.
- Fischer-Jørgensen, E. (1985). Some basic vowel features. In Fromkin (1985). 79–99.
- Foley, J. (1977). *Foundations of theoretical phonology*. Cambridge: Cambridge University Press.
- Fromkin, V. A. (ed.) (1978). *Tone: a linguistic survey*. New York: Academic Press.
- (1985). *Phonetic linguistics: essays in honor of Peter Ladefoged*. Orlando: Academic Press.
- Fuchs, A. (1976). 'Normaler' und 'kontrastiver' Akzent. *Lingua* 38. 293–312.
- Fudge, E. (1969). Syllables. *Journal of Linguistics* 5. 253–86.
- (1987). Branching structure within the syllable. *Journal of Linguistics* 23. 359–77.
- Giegerich, H. J. (1981). Zero syllables in metrical theory. In Dressler *et al.* (1981). 153–60.
- (1985). *Metrical phonology and phonological structure*. Cambridge: Cambridge University Press.
- Goad, H. (1993). *On the configuration of height features*. Ph.D. dissertation, University of Southern California.
- Goldsmith, J. A. (1976). *Autosegmental phonology*. Ph.D. dissertation, Massachusetts Institute of Technology.
- (1982). Accent systems. In van der Hulst and Smith (1982b: vol. I). 47–63.
- (1985). Vowel harmony in Khalkha Mongolian, Yaka, Finnish and Hungarian. *Phonology Yearbook* 2. 253–75.
- (1989). Licensing, inalterability, and harmonic rule application. *Papers from the Annual Regional Meeting, Chicago Linguistic Society* 25:1. 145–56.

- (1990). *Autosegmental and metrical phonology*. Oxford: Blackwell.
- (1992). A note on the genealogy of research traditions in modern phonology. *Journal of Linguistics* 28. 149–63.
- (1993). Harmonic phonology. In J. A. Goldsmith (ed.) *The last phonological rule*. Chicago: University of Chicago Press. 21–60.
- (1994). Disentangling autosegments: a response. *Journal of Linguistics* 30. 499–507.
- (ed.) (1995). *The handbook of phonological theory*. Cambridge, Mass. and Oxford: Blackwell.
- (1997). Review of Bird (1995). *Phonology* 14. 133–41.
- Gordon, E. V. (1957). *An introduction to Old Norse*. 2nd edn. Oxford: Clarendon Press.
- Greenberg, J. (ed.) (1978). *Universals of human language. Vol. II: Phonology*. Stanford: Stanford University Press.
- Griffen, T. D. (1976). Toward a nonsegmental phonology. *Lingua* 40. 1–20.
- Gussenhoven, C. (1984). *On the grammar and semantics of sentence accents*. Dordrecht: Foris.
- Gussenhoven, C. and G. Bruce (1999). Word prosody and intonation. In van der Hulst (1999). 233–71.
- Hall, T. A. (1997). *The phonology of coronals*. Amsterdam: John Benjamins.
- Halle, M. (1959). *The sound pattern of Russian*. The Hague: Mouton.
- (1983). On distinctive features and their articulatory implementation. *Natural Language and Linguistic Theory* 1. 91–107.
- (1990). Respecting metrical structure. *Natural Language and Linguistic Theory* 8. 149–76.
- (1995). Feature geometry and feature spreading. *Linguistic Inquiry* 26. 1–46.
- Halle, M. and G. N. Clements (1983). *Problem book in phonology*. Cambridge, Mass.: MIT Press.
- Halle, M. and W. J. Idsardi (1995). General properties of stress and metrical structure. In Goldsmith (1995). 403–43.
- Halle, M. and S. J. Keyser (1971). *English stress: its growth and its role in verse*. New York: Harper and Row.
- Halle, M., W. O'Neil and J.-R. Vergnaud (1993). Metrical coherence in Old English without the Germanic foot. *Linguistic Inquiry* 24. 529–38.
- Halle, M. and K. N. Stevens (1971). A note on laryngeal features. *MIT Quarterly Progress Report* 101. 198–213.
- (1979). Some reflections on the theoretical bases of phonetics. In B. Lindblom and S. Öhman (eds.) *Frontiers of speech communication*. London: Academic Press. 335–49.
- Halle, M. and J.-R. Vergnaud (1978). Metrical structures in phonology. Ms., Massachusetts Institute of Technology.
- (1981). Harmony processes. In W. Klein and W. Levelt (eds.) *Crossing the boundaries in linguistics*. Dordrecht: Reidel. 1–22.
- (1987a). *An essay on stress*. Cambridge, Mass.: MIT Press.
- (1987b). Stress and the cycle. *Linguistic Inquiry* 18. 45–84.

- Hammond, M. (1988). On deriving the well-formedness condition. *Linguistic Inquiry* 19. 319–25.
- Hankamer, J. and J. Aissen (1974). The sonority hierarchy. In A. Bruck, R. A. Fox and M. W. La Galy (eds.) *Papers from the parasession on natural phonology*. Chicago: Chicago Linguistic Society. 131–45.
- Hanson, K. and P. Kiparsky (1996). A parametric theory of poetic meter. *Language* 72. 287–335.
- Haraguchi, S. (1977). *The tone pattern of Japanese*. Tokyo: Kaitaku-sya.
- Harris, J. (1990). Segmental complexity and phonological government. *Phonology* 7. 255–300.
- (1994). *English sound structure*. Oxford and Cambridge, Mass.: Blackwell.
- (1997). Licensing Inheritance: an integrated theory of neutralisation. *Phonology* 14. 315–70.
- Harris, J. and J. Kaye (1990). A tale of two cities: London glottalling and New York tapping. *The Linguistic Review* 7. 251–74.
- Harris, J. and G. Lindsey (1995). The elements of phonological representation. In Durand and Katamba (1995). 34–79.
- Harris, J. W. (1983). *Syllable structure and stress in Spanish*. Cambridge, Mass.: MIT Press.
- Hayes, B. (1981). *A metrical theory of stress rules*. Ph.D. dissertation, Massachusetts Institute of Technology. Revised version distributed by Indiana University Linguistics Club. Published 1985, New York: Garland.
- (1982). Extrametricality and English stress. *Linguistic Inquiry* 13. 227–76.
- (1983). A grid-based theory of English meter. *Linguistic Inquiry* 14. 357–93.
- (1984a). The phonology of rhythm in English. *Linguistic Inquiry* 15. 33–74.
- (1984b). The phonetics and phonology of Russian voicing assimilation. In Aronoff and Oehrle (1984). 318–28.
- (1987). A revised parametric metrical theory. *Papers from the Annual Meeting of the North East Linguistic Society* 17. 274–89.
- (1989a). Compensatory lengthening in moraic phonology. *Linguistic Inquiry* 20. 253–306.
- (1989b). The prosodic hierarchy in meter. In Kiparsky and Youmans (1989). 253–306.
- (1994). Weight of CVC can be determined by context. In J. Cole and C. Kisseeberth (eds.) *Perspectives in phonology*. Stanford: CSLI. 61–79.
- (1995). *Metrical stress theory: principles and case studies*. Chicago: University of Chicago Press.
- Hayward, K. M. and R. J. Hayward (1989). Guttural: arguments for a new distinctive feature. *Transactions of the Philological Society* 87. 179–93.
- Hayward, R. J. (1988). In defense of the skeletal tier. *Studies in African Linguistics* 19. 131–72.
- Herbert, R. K. (1986). *Language universals, markedness theory, and natural phonetic processes*. Berlin: Mouton de Gruyter.

- Heuven, V. van and A. Sluijter (1996). Notes on the phonetics of word prosody. In R. Goedemans, H. G. van der Hulst and E. Visch (eds.) *Stress patterns of the world. Part 1: Background*. The Hague: Holland Academic Graphics. 233–69.
- Hoard, J. E. (1978). Remarks on the nature of syllabic stops and affricates. In Bell and Hooper (1978). 59–72.
- Hock, H. H. (1986). Compensatory lengthening: in defense of the concept ‘mora’. *Folia Linguistica* 20. 431–60.
- Hogg, R. M. (1992a). Phonology and morphology. In R. M. Hogg (ed.) *The Cambridge history of the English language*. Vol. I: *The beginnings to 1066*. Cambridge: Cambridge University Press. 67–167.
- (1992b). *A grammar of Old English*. Vol. I: *Phonology*. Oxford: Blackwell.
- Hogg, R. M. and C. B. McCully (1987). *Metrical phonology: a coursebook*. Cambridge: Cambridge University Press.
- Hooper, J. B. (1976). *An introduction to natural generative phonology*. New York: Academic Press.
- Hualde, J. I. (1999). Basque accentuation. In van der Hulst (1999). 947–93.
- Huffman, M. and R. Krakow (eds.) (1993). *Nasals, nasalization, and the velum*. Orlando: Academic Press.
- Hulst, H. G. van der (1984). *Syllable structure and stress in Dutch*. Dordrecht: Foris.
- (1985). Ambisyllabicity in Dutch. In H. Bennis and F. Beukema (eds.) *Linguistics in the Netherlands 1985*. Dordrecht: Foris. 57–66.
- (1988). The geometry of vocalic features. In van der Hulst and Smith (1988a: vol. II). 77–125.
- (1989). Atoms of segmental structure: components, gestures and dependency. *Phonology* 6. 253–84.
- (1993). Units in the analysis of signs. *Phonology* 10. 209–41.
- (1995). Radical CV phonology: the categorial gesture. In Durand and Katamba (1995). 80–116.
- (1997). Issues in foot typology. *Toronto Working Papers in Linguistics* 16. 77–101.
- (ed.) (1999). *Word prosodic systems in the languages of Europe*. Berlin: Mouton de Gruyter.
- Hulst, H. G. van der and C. J. Ewen (1991). Major class and manner features. In P. M. Bertinetto, M. Kenstowicz and M. Loporcaro (eds.) *Certamen phonologicum II: papers from the 1990 Cortona Phonology Meeting*. Turin: Rosenberg and Sellier. 19–41.
- Hulst, H. G. van der and N. A. Ritter (eds.) (1999). *The syllable: views and facts*. Berlin: Mouton de Gruyter.
- Hulst, H. G. van der and N. S. H. Smith (1982a). An overview of autosegmental and metrical phonology. In van der Hulst and Smith (1982b: part 1). 1–45.
- (eds.) (1982b). *The structure of phonological representations*. 2 parts. Dordrecht: Foris.
- (1985). The framework of nonlinear generative phonology. In H. G. van der Hulst and N. S. H. Smith (eds.) *Advances in nonlinear phonology*. Dordrecht: Foris. 3–55.

- (eds.) (1988a). *Features, segmental structure and harmony processes*. 2 vols. Dordrecht: Foris.
- (eds.) (1988b). *Autosegmental studies on pitch accent*. Dordrecht: Foris.
- Hulst, H. G. van der and K. L. Snider (eds.) (1993). *The phonology of tone: the representation of tonal register*. Berlin: Mouton de Gruyter.
- Hulst, H. G. van der and J. M. van de Weijer (1991). Topics in Turkish phonology. In H. Boeschoten and L. Verhoeven (eds.) *Turkish linguistics today*. Leiden: E. J. Brill. 11–59.
- (1995). Vowel harmony. In Goldsmith (1995). 495–534.
- Hume, E. V. (1990). Front vowels, palatal consonants and the rule of umlaut in Korean. *Papers from the Annual Meeting of the North East Linguistic Society* 20. 230–43.
- (1992). *Front vowels, coronal consonants and their interaction in non-linear phonology*. Ph.D. dissertation, Cornell University.
- Hume, E. V. and D. Odden (1995). The superfluity of [consonantal]. *Papers from the Annual Meeting of the North East Linguistic Society* 25. 245–61.
- Hurch, B. (1996). Accentuations. In B. Hurch and R. Rhodes (eds.) *Natural Phonology: the state of the art*. Berlin: Mouton de Gruyter. 73–96.
- Hyman, L. M. (1973). The feature [grave] in phonological theory. *Journal of Phonetics* 1. 329–37.
- (1975). *Phonology: theory and analysis*. New York: Holt, Rinehart and Winston.
- (1977). On the nature of linguistic stress. In L. M. Hyman (ed.) *Studies in stress and accent*. Los Angeles: Department of Linguistics, University of Southern California. 37–82.
- (1985). *A theory of phonological weight*. Dordrecht: Foris.
- (1992). Moraic mismatches in Bantu. *Phonology* 9. 255–65.
- Ingram, D. (1978). The role of the syllable in phonological development. In Bell and Hooper (1978). 143–55.
- Inkelas, S. and D. Zec (eds.) (1990). *The phonology–syntax connection*. Chicago: University of Chicago Press.
- (1995). Syntax–phonology interface. In Goldsmith (1995). 535–49.
- Itô, J. (1986). *Syllable theory in prosodic phonology*. Ph.D. dissertation, University of Massachusetts. Published 1988, New York: Garland.
- Itô, J. and R. A. Mester (1992). Weak layering and word binarity. Report LRC-93-08, Linguistic Research Center, University of California, Santa Cruz.
- Itô, J., R. A. Mester and J. Padgett (1995). Licensing and redundancy: underspecification in Optimality Theory. *Linguistic Inquiry* 26. 571–613.
- Iverson, G. K. (1983). On glottal width features. *Lingua* 60. 331–9.
- Jackendoff, R. (1977). *X-syntax: a study of phrase structure*. Cambridge, Mass.: MIT Press.
- Jacobs, H. (1989). *Nonlinear studies in the historical phonology of French*. Ph.D. dissertation, Catholic University of Brabant.
- Jakobson, R., C. G. M. Fant and M. Halle (1951). *Preliminaries to speech analysis*. Cambridge, Mass.: MIT Press.
- Jakobson, R. and M. Halle (1956). *Fundamentals of language*. The Hague: Mouton.
- Jakobson, R. and L. R. Waugh (1979). *The sound shape of language*. Brighton: Harvester Press.
- Jones, C. (1976). Some constraints on medial consonant clusters. *Language* 52. 121–30.
- (1989). *A history of English phonology*. London: Longman.
- Jones, D. (1977). *English pronouncing dictionary*. 14th edn, ed. A. C. Gimson. Cambridge: Cambridge University Press.
- Jusczyk, P. W. (1997). *The discovery of spoken language*. Cambridge, Mass.: MIT Press.
- Kager, R. (1989). *A metrical theory of stress and destressing in English and Dutch*. Dordrecht: Foris.
- (1993). Alternatives to the iambic–trochaic law. *Natural Language and Linguistic Theory* 11. 381–432.
- (1995). The metrical theory of word stress. In Goldsmith (1995). 367–402.
- (1999). *Optimality Theory: a textbook*. Cambridge: Cambridge University Press.
- Kager, R., M. Trommelen and E. Visch (1985). Over Nederlandse lettergreep- en klemtoonstructuur. (Review of van der Hulst 1984.) *Spektator* 15. 123–38.
- Kahn, D. (1976). *Syllable-based generalizations in English phonology*. Ph.D. dissertation, Massachusetts Institute of Technology. Published 1980, New York: Garland.
- Kaisse, E. M. (1985). *Connected speech: the interaction of syntax and phonology*. New York: Academic Press.
- (1992). Can [consonantal] spread? *Language* 68. 313–32.
- Kaisse, E. and P. A. Shaw (1985). On the theory of Lexical Phonology. *Phonology Yearbook* 2. 1–30.
- Kaye, J. (1989). *Phonology: a cognitive view*. Hillsdale, N.J.: Lawrence Erlbaum.
- (1990). ‘Coda’ licensing. *Phonology* 7. 301–30.
- (1995). Derivations and interfaces. In Durand and Katamba (1995). 289–332.
- (1996). Do you believe in magic? In H. Kardela and B. Szymanek (eds.) *A Festschrift for Edmund Gussmann from his friends and colleagues*. Lublin: The University Press of the Catholic University of Lublin. 155–76.
- Kaye, J. D. and J. Lowenstamm (1984). De la syllabicité. In F. Dell, D. Hirst and J.-R. Vergnaud (eds.) *Forme sonore du langage*. Paris: Hermann. 123–59.
- Kaye, J., J. Lowenstamm and J.-R. Vergnaud (1985). The internal structure of phonological elements: a theory of charm and government. *Phonology Yearbook* 2. 305–28.
- (1990). Constituent structure and government in phonology. *Phonology* 7. 193–231.
- Kean, M.-L. (1974). The strict cycle in phonology. *Linguistic Inquiry* 5. 179–203.
- (1980). *The theory of markedness in generative grammar*. Indiana University Linguistics Club.
- Keating, P. A. (1988a). Survey of phonological features. Indiana University Linguistics Club.
- (1988b). Underspecification in phonetics. *Phonology* 5. 275–92.
- (1991). Coronal places of articulation. In Paradis and Prunet (1991). 29–48.

- Kenstowicz, M. (1994). *Phonology in generative grammar*. Oxford: Blackwell.
- Kenstowicz, M. and C. Kissoberth (1979). *Generative phonology*. New York: Academic Press.
- Kerek, A. (1971). *Hungarian metrics: some linguistic aspects of iambic verse*. Bloomington: Indiana University.
- Key, H. (1961). Phonotactics of Cayuvava. *International Journal of American Linguistics* 27. 143–50.
- Kiparsky, P. (1977). The rhythmic structure of English verse. *Linguistic Inquiry* 8. 189–247.
- (1979). Metrical structure assignment is cyclic. *Linguistic Inquiry* 10. 421–42.
- (1981). Remarks on the metrical structure of the syllable. In Dressler *et al.* (1981). 245–56.
- (1982). From cyclic phonology to lexical phonology. In van der Hulst and Smith (1982b: part 1). 131–75.
- (1985). Some consequences of Lexical Phonology. *Phonology Yearbook* 2. 85–138.
- (1995). The phonological basis of sound change. In Goldsmith (1995). 640–70.
- Kiparsky, P. and G. Youmans (eds.) (1989). *Rhythm and meter*. Orlando: Academic Press.
- Klausenburger, J. (1977). A non-rule of French: h-aspiré. *Linguistics* 192. 45–52.
- (1978). French linking phenomena: a natural generative analysis. *Language* 54. 21–40.
- Kornai, A. (1995). *Formal phonology*. New York: Garland.
- Kubozono, H. (1989). The mora and syllable structure in Japanese. *Language and Speech* 32. 249–78.
- Kuroda, S.-Y. (1967). *Yawelmani phonology*. Cambridge, Mass.: MIT Press.
- Ladd, D. R. (1996). *Intonational phonology*. Cambridge: Cambridge University Press.
- Ladefoged, P. (1971). *Preliminaries to linguistic phonetics*. Chicago: Chicago University Press.
- (1973). The features of the larynx. *Journal of Phonetics* 1. 73–83.
- (1975). *A course in phonetics*. New York: Harcourt Brace Jovanovich.
- (1980). What are linguistic sounds made of? *Language* 56. 485–502.
- Ladefoged, P. and I. Maddieson (1989). Phonological features for places of articulation. In L. M. Hyman and C. Li (eds.) *Language, speech and mind*. London: Routledge. 49–61.
- (1996). *The sounds of the world's languages*. Oxford: Blackwell.
- Ladefoged, P. and A. Traill (1994). Clicks and their accompaniments. *Journal of Phonetics* 22. 33–64.
- Lahiri, A. and S. E. Blumstein (1984). A re-evaluation of the feature coronal. *Journal of Phonetics* 12. 133–45.
- Lahiri, A. and B. E. Dresher (ms). OSL in West Germanic. University of Konstanz and University of Toronto.
- Lahiri, A. and H. G. van der Hulst (1988). On foot typology. *Papers from the Annual Meeting of the North East Linguistic Society* 18. 286–309.
- Lahiri, A. and J. Koreman (1988). Syllable weight and quantity in Dutch. *Proceedings of the West Coast Conference on Formal Linguistics* 7. 217–28.
- Lahiri, A., T. Riad and H. Jacobs (1999). Diachronic prosody. In van der Hulst (1999). 355–422.
- Langendoen, D. T. (1968). *The London school of linguistics*. Cambridge, Mass.: MIT Press.
- Langeweg, S. J. (1988). *The stress system of Dutch*. Ph.D. dissertation, University of Leiden.
- Lapointe, S. G. and M. H. Feinstein (1982). The role of vowel deletion and epenthesis in the assignment of syllable structure. In van der Hulst and Smith (1982b: part 2). 69–120.
- Lass, R. (1971). Boundaries as obstruents: Old English voicing assimilation and universal strength hierarchies. *Journal of Linguistics* 7. 15–30.
- (1975). How intrinsic is content? Markedness, sound change and 'family universals'. In D. Goyvaerts and G. K. Pullum (eds.) *Essays on the sound pattern of English*. Ghent: Story-Scientia. 475–504.
- (1976). *English phonology and phonological theory: synchronic and diachronic studies*. Cambridge: Cambridge University Press.
- (1984a). *Phonology: an introduction to basic concepts*. Cambridge: Cambridge University Press.
- (1984b). Vowel system universals and typology: prologue to theory. *Phonology Yearbook* 1. 75–111.
- (1987). *The shape of English*. London: J. M. Dent.
- (1992). Phonology and morphology. In N. Blake (ed.) *The Cambridge history of the English language*. Vol. II: 1066–1476. Cambridge: Cambridge University Press. 23–155.
- Lass, R. and J. M. Anderson (1975). *Old English phonology*. Cambridge: Cambridge University Press.
- Lehiste, I. (1970). *Suprasegmentals*. Cambridge, Mass.: MIT Press.
- Levett, C. C. (1994). *On the acquisition of place*. Ph.D. dissertation, University of Leiden.
- Levin, J. (1985). *A metrical theory of syllabicity*. Ph.D. dissertation, Massachusetts Institute of Technology.
- Liberman, M. (1975). *The intonational system of English*. Ph.D. dissertation, Massachusetts Institute of Technology.
- Liberman, M. and A. S. Prince (1977). On stress and linguistic rhythm. *Linguistic Inquiry* 8. 249–336.
- Liddell, S. and R. Johnson (1989). American Sign Language: the phonological base. *Sign Language Studies* 64. 197–277.
- Lindau, M. (1978). Vowel features. *Language* 54. 541–63.
- (1985). The story of /r/. In Fromkin (1985). 157–68.
- Lombardi, L. (1991). *Laryngeal features and laryngeal neutralization*. Ph.D. dissertation, University of Massachusetts, Amherst.

- (1996). Postlexical rules and the status of privative features. *Phonology* 13. 1–38.
- Loporcaro, M. (1996). Lengthening and raddoppiamento fonosintattico. In M. Maiden and M. Parry (eds.) *The dialects of Italy*. London: Routledge. 41–51.
- Lowenstamm, J. and J. Kaye (1986). Compensatory lengthening in Tiberian Hebrew. In Wetzel and Sezer (1986). 97–132.
- McArthur, H. and L. McArthur (1956). Aguacatec (Mayan) phonemes within the stress group. *International Journal of American Linguistics* 22. 72–6.
- McCarthy, J. J. (1979). On stress and syllabification. *Linguistic Inquiry* 10. 443–65.
- (1988). Feature geometry and dependency: a review. *Phonetica* 43. 84–108.
- (1994). The phonetics and phonology of Semitic pharyngeals. In P. Keating (ed.) *Papers in laboratory phonology 3: phonological structure and phonetic form*. Cambridge: Cambridge University Press. 191–233.
- McCarthy, J. J. and A. S. Prince (1993). *Prosodic Morphology I: constraint interaction and satisfaction*. Ms., University of Massachusetts, Amherst and Rutgers University.
- McCarthy, J. J. and A. Taub (1992). Review of Paradis and Prunet (1991). *Phonology* 9. 363–70.
- McCawley, J. D. (1968). *The phonological component of a grammar of Japanese*. The Hague: Mouton.
- McMahon, A., P. Foulkes and L. Tollfree (1994). Gestural representations and Lexical Phonology. *Phonology* 11. 277–316.
- Macken, M. A. (1995). Phonological acquisition. In Goldsmith (1995). 671–96.
- Maddieson, I. (1978). Universals of tone. In Greenberg (1978). 335–65.
- (1984). *Patterns of sounds*. Cambridge: Cambridge University Press.
- Malsch, D. L. and R. Fulcher (1989). Categorizing phonological segments: the inadequacy of the sonority hierarchy. In Corrigan *et al.* (1989). 69–80.
- Merrifield, W. R. (1963). Palantla Chinantec syllable types. *Anthropological Linguistics* 5. 1–16.
- Mester, R. A. (1988). Dependent tier ordering and the OCP. In van der Hulst and Smith (1988a: vol. II). 127–44.
- (1994). The quantitative trochee in Latin. *Natural Language and Linguistic Theory* 12. 1–61.
- Mester, R. A. and J. Itô (1989). Feature predictability and underspecification: palatal prosody in Japanese mimetics. *Language* 65. 258–93.
- Minkova, D. (1991). *The history of final vowels in English: the sound of muting*. Berlin: Mouton de Gruyter.
- Mohanan, K. P. (1991). On the bases of underspecification. *Natural Language and Linguistic Theory* 9. 285–325.
- Murray, R. and T. Vennemann (1983). Sound change and syllable structure in Germanic phonology. *Language* 59. 514–28.
- Napoli, D. J. and M. Nespor (1979). The syntax of word-initial consonant gemination in Italian. *Language* 55. 812–42.
- Nathan, G. S. (1989). Preliminaries to a theory of phonological substance: the substance of sonority. In Corrigan *et al.* (1989). 55–67.
- Nespor, M. (1999). Stress domains. In van der Hulst (1999). 117–59.
- Nespor, M. and I. Vogel (1982). Prosodic domains of external sandhi rules. In van der Hulst and Smith (1982b: part 1). 225–55.
- (1986). *Prosodic phonology*. Dordrecht: Foris.
- (1989). On clashes and lapses. *Phonology* 6. 69–116.
- Newman, P. (1972). Syllable weight as a phonological variable. *Studies in African Linguistics* 3. 301–24.
- Ní Chiosáin, M. (1994). Irish palatalisation and the representation of place features. *Phonology* 11. 89–106.
- Noske, R. (1992). *A theory of syllabification and segmental alternation, with studies on the phonology of French, German, Tonkawa and Yawelmani*. Ph.D. dissertation, Catholic University of Brabant.
- Ó Dochartaigh, C. (1978). Lenition and dependency phonology. *Éigse* 17. 457–94.
- Odden, D. (1978). Further evidence for the feature [grave]. *Linguistic Inquiry* 9. 141–44.
- (1988). Anti antigrammaticity and the OCP. *Linguistic Inquiry* 19. 451–75.
- (1991). Vowel geometry. *Phonology* 8. 261–89.
- (1995). Tone: African languages. In Goldsmith (1995). 444–75.
- Ogden, R. (1999). Non-terminal phonological features in Finnish. In van der Hulst and Ritter (1999). 651–72.
- Ogden, R. and J. K. Local (1994). Disentangling autosegments from prosodies: a note on the misrepresentation of a research tradition in phonology. *Journal of Linguistics* 30. 477–98.
- Ohala, J. (1992). Alternatives to the sonority hierarchy for explaining segmental sequential constraints. *Papers from the Annual Regional Meeting, Chicago Linguistic Society* 28:2. 319–38.
- Oostendorp, M. van (1995). Vowel quality and syllable projection. Ph.D. dissertation, Catholic University of Brabant.
- Osborne, H. A., Jr (1966). Warao I: phonology and morphophonemics. *International Journal of American Linguistics* 32. 108–23.
- Padgett, J. (1995). *Stricture in feature geometry*. Stanford: CSLI.
- Palmer, F. R. (ed.) (1970). *Prosodic analysis*. Oxford: Oxford University Press.
- Paradis, C. and J.-F. Prunet (eds.) (1991). *The special status of coronals: internal and external evidence*. New York: Academic Press.
- Peperkamp, S. (1995). On the prosodic incorporation of clitics. Paper presented at the Conference on Interfaces in Phonology, Berlin.
- Perlmutter, D. M. (1992). Sonority and syllable structure in American Sign Language. *Linguistic Inquiry* 23. 407–42.
- Pierrehumbert, J. B. (1980). *The phonetics and phonology of English intonation*. Ph.D. dissertation, Massachusetts Institute of Technology.
- Pierrehumbert, J. B. and M. E. Beckman (1988). *Japanese tone structure*. Cambridge, Mass.: MIT Press.

- Piggott, G. L. (1988). A parametric approach to nasal harmony. In van der Hulst and Smith (1988a: vol. I). 131–67.
- (1992). Variability in feature dependency: the case of nasality. *Natural Language and Linguistic Theory* 10. 33–77.
- (1995). Epenthesis and syllable weight. *Natural Language and Linguistic Theory* 13. 283–326.
- (1997). Licensing alignment: an integrated theory of neutralisation. *Phonology* 14. 437–77.
- Piggott, G. L. and H. G. van der Hulst (1997). Locality and the nature of nasal harmony. *Lingua* 103. 85–112.
- Piggott, G. L. and R. Singh (1985). The phonology of epenthetic segments. *Canadian Journal of Linguistics* 30. 415–53.
- Pike, K. L. (1943). *Phonetics*. Ann Arbor: University of Michigan Press.
- Polgárdi, K. (1998). Vowel harmony: an account in terms of government and optimality. Ph.D. dissertation, University of Leiden.
- Prince, A. S. (1980). A metrical theory for Estonian quantity. *Linguistic Inquiry* 11. 511–62.
- (1983). Relating to the grid. *Linguistic Inquiry* 14. 19–100.
- Prince, A. S. and P. Smolensky (1993). *Optimality Theory: constraint interaction in generative grammar*. Ms., Rutgers University and University of Colorado, Boulder.
- Pulgram, E. (1970). *Syllable, word, nexus, cursus*. The Hague: Mouton.
- Pulleyblank, D. (1988a). Vocalic underspecification in Yoruba. *Linguistic Inquiry* 19. 233–70.
- (1988b). Underspecification, the feature hierarchy and Tiv vowels. *Phonology* 5. 299–326.
- (1994). Underlying mora structure. *Linguistic Inquiry* 25. 344–53.
- (1995). Feature geometry and underspecification. In Durand and Katamba (1995). 3–33.
- Pulleyblank, E. G. (1989). The role of coronal in articulator based features. *Papers from the Annual Regional Meeting, Chicago Linguistic Society* 25:1. 379–93.
- Rennison, J. R. (1986). On tridirectional feature systems for vowels. In Durand (1986a). 281–304.
- (1990). On the elements of phonological representations: the evidence from vowel systems and vowel processes. *Folia Linguistica* 24. 175–244.
- Revithiadou, A. (1999). *The prosody-morphology interface*. Ph.D. dissertation, University of Leiden.
- Rice, C. (1992). *Binarity and ternarity in metrical theory: parametric extensions*. Ph.D. dissertation, University of Texas, Austin.
- Rice, K. D. (1992). On deriving sonority: a structural account of sonority relationships. *Phonology* 9. 61–99.
- (1995). Peripheral in consonants. *Canadian Journal of Linguistics* 39. 191–282.
- Rice, K. D. and P. Avery (1997). Variability in a deterministic model of language acquisition: a theory of segmental elaboration. In Archibald (1997). 23–42.
- Ringen, C. O. (1975). *Vowel harmony: theoretical implications*. Ph.D. dissertation, Indiana University.
- (1988). Transparency in Hungarian vowel harmony. *Phonology* 5. 327–42.
- Ritt, N. (1994). *Quantity adjustment: vowel lengthening and shortening in Early Middle English*. Cambridge: Cambridge University Press.
- Ritter, N. A. (1995). *The role of universal grammar in phonology: a Government Phonology approach to Hungarian*. Ph.D. dissertation, New York University.
- Roberts, J. R. (1987). *Amele*. London: Croom Helm.
- Roca, I. (1986). Secondary stress and metrical rhythm. *Phonology Yearbook* 3. 341–70.
- Rosenthal, S. and H. G. van der Hulst (1999). Weight-by-position by position. *Natural Language and Linguistic Theory* 17. 499–540.
- Rowicka, G. (1999). *On ghost vowels: a strict CV approach*. Ph.D. dissertation, University of Leiden.
- Rubach, J. (1996). Shortening and ambisyllabicity in English. *Phonology* 13. 197–237.
- Rubach, J. and G. Booij (1990). Syllable structure assignment in Polish. *Phonology* 7. 121–58.
- Sagey, E. (1986). *The representation of features and relations in nonlinear phonology*. Ph.D. dissertation, Massachusetts Institute of Technology.
- (1988). Degree of closure in complex segments. In van der Hulst and Smith (1988a: vol. I). 169–208.
- Salmons, J. (1992). *Accentual change and language contact: comparative survey and a case study of early Northern Europe*. London: Routledge.
- Sanders, G. (1972). *The simplex-feature hypothesis*. Indiana University Linguistics Club.
- Sandler, W. (1989). *Phonological representation of the sign: linearity and non-linearity in American Sign Language*. Dordrecht: Foris.
- Schane, S. A. (1973). [back] and [round]. In S. R. Anderson and P. Kiparsky (eds.) *A Festschrift for Morris Halle*. New York: Holt, Rinehart and Winston. 174–84.
- (1979). Rhythm, accent, and stress in English. *Linguistic Inquiry* 10. 483–502.
- (1984). The fundamentals of particle phonology. *Phonology Yearbook* 1. 129–55.
- Schein, B. and D. Steriade (1986). On geminates. *Linguistic Inquiry* 17. 691–744.
- Schmidt, D. (1992). Compensatory lengthening in a segmental moraic theory of representation. *Linguistics* 30. 513–34.
- Scobbie, J. M. (1997). *Autosegmental representation in a declarative constraint-based framework*. New York: Garland.
- Selkirk, E. O. (1972). *The phrase phonology of English and French*. Ph.D. dissertation, Massachusetts Institute of Technology.
- (1978). The French foot: on the status of ‘mute’ e. *Studies in French Linguistics* 1. 141–150.
- (1980). The role of prosodic categories in English word stress. *Linguistic Inquiry* 11. 563–605.
- (1982). The syllable. In van der Hulst and Smith (1982b: part 2). 337–83.
- (1984a). *Phonology and syntax: the relation between sound and structure*. Cambridge, Mass.: MIT Press.

- (1984b). On the major class features and syllable theory. In Aronoff and Oehrle (1984). 107–36.
- (1995). Sentence prosody: intonation, stress, and phrasing. In Goldsmith (1995). 550–69.
- Sluijter, A. (1995). *Phonetic correlates of stress and accent*. Ph.D. dissertation, University of Leiden.
- Smith, N. S. H. (1988). Consonant place features. In van der Hulst and Smith (1988a: vol. I). 209–35.
- Spencer, A. (1985). Eliminating the feature [lateral]. *Journal of Linguistics* 20. 23–43.
- (1996). *Phonology: theory and description*. Oxford: Blackwell.
- Stanley, R. (1967). Redundancy rules in phonology. *Language* 43. 393–436.
- Steriade, D. (1982). *Greek prosodies and the nature of syllabification*. Ph.D. dissertation, Massachusetts Institute of Technology. Published 1990, New York: Garland.
- (1987). Redundant values. *Papers from the Annual Regional Meeting, Chicago Linguistic Society* 23:2. 339–62.
- (1995). Underspecification and markedness. In Goldsmith (1995). 114–74.
- (1996). Licensing laryngeal features. *UCLA Working Papers in Phonology* 1.
- Stevens, K. N. (1972). The quantal nature of speech. In E. E. David and P. B. Denes (eds.) *Human communication: a unified view*. New York: McGraw Hill. 51–66.
- (1989). On the quantal nature of speech. *Journal of Phonetics* 17. 3–45.
- Stevens, K. N. and S. J. Keyser (1989). Primary features and their enhancement in consonants. *Language* 65. 81–106.
- Stevens, K. N., S. J. Keyser and H. Kawasaki (1986). Toward a phonetic and phonological theory of redundant features. In J. S. Perkell and D. H. Klatt (eds.) *Invariance and variability in speech processes*. Hillsdale, N.J.: Lawrence Erlbaum. 426–49.
- Stewart, J. M. (1967). Tongue root position in Akan vowel harmony. *Phonetica* 16. 185–204.
- (1983). Akan vowel harmony: the word structure conditions and the floating vowels. *Studies in African Linguistics* 14. 111–39.
- Stoel-Gammon, C. and J. P. Stemberger (1994). Consonant harmony and phonological underspecification in child speech. In M. Yavas (ed.) *First and second language phonology*. San Diego: Singular Publishing Group. 63–80.
- Svantesson, J. O. (1985). Vowel harmony shift in Mongolian. *Lingua* 67. 283–329.
- Tranel, B. (1987). *The sounds of French*. Cambridge: Cambridge University Press.
- (1991). CVC light syllables, geminates and Moraic Theory. *Phonology* 8. 291–302.
- (1995). French final consonants and nonlinear phonology. *Lingua* 95. 131–67.
- Trigo, L. (1991). On pharynx–larynx interactions. *Phonology* 8. 113–36.
- Trommelen, M. (1983). *The syllable in Dutch, with special reference to diminutive formation*. Dordrecht: Foris.
- Trommelen, M. and W. Zonneveld (1999). Word-stress in West-Germanic languages: English. In van der Hulst (1999). 478–515.

- Trubetzkoy, N. S. (1939). *Grundzüge der Phonologie*. Göttingen: Vandenhoeck and Ruprecht. Translated 1969 by C. A. M. Baltaxe as *Principles of phonology*. Berkeley and Los Angeles: University of California Press.
- Ultan, R. (1973). Some reflections on vowel harmony. *Working Papers on Language Universals* 12. 37–67.
- Vago, R. (1973). Abstract vowel harmony systems in Uralic and Altaic languages. *Language* 49. 579–605.
- (1976). More evidence for the feature [grave]. *Linguistic Inquiry* 7. 671–4.
- (ed.) (1980). *Issues in vowel harmony*. Amsterdam: John Benjamins.
- Vennemann, T. (1972). On the theory of syllabic phonology. *Linguistische Berichte* 18. 1–18.
- (1988). *Preference laws for syllable structure and the explanation of sound change*. Berlin: Mouton de Gruyter.
- Vennemann, T. and P. Ladefoged (1973). Phonetic features and phonological features. *Lingua* 32. 61–74.
- Vergnaud, J.-R. and M. Halle (1978). Metrical structures in phonology. Ms., Massachusetts Institute of Technology.
- Vihman, M. (1978). Consonant harmony: its scope and function in child language. In Greenberg (1978). 281–334.
- Vijver, R. van de (1998). *The iambic issue: iambs as a result of constraint interaction*. Ph.D. dissertation, University of Leiden.
- Visch, E. A. M. (1989). *A metrical theory of rhythmic stress phenomena*. Ph.D. dissertation, University of Utrecht.
- Walsh Dickey, L. (1997). *The phonology of liquids*. Ph.D. dissertation, University of Massachusetts, Amherst.
- Wang, W. S.-Y. (1968). Vowel features, paired variables, and the English vowel shift. *Language* 44. 695–708.
- Weijer, J. van de (1994). *Segmental structure and complex segments*. Ph.D. dissertation, University of Leiden.
- Wells, J. (1982). *Accents of English*. Vol. II: *The British Isles*. Cambridge: Cambridge University Press.
- Wetzel, L. (1986). Phonological timing in Ancient Greek. In Wetzel and Sezer (1986). 297–344.
- Wetzel, L. and E. Sezer (eds.) (1986). *Studies in compensatory lengthening*. Dordrecht: Foris.
- Wilbur, R. B. (1990). Why syllables? What the notion means for ASL research. In S. Fischer and P. Siple (eds.) *Theoretical issues in sign language research*. Vol. I. Chicago: University of Chicago Press. 81–108.
- (1993). Syllables and segments: hold the movement and move the holds! In G. Coulter (ed.) *Current issues in ASL phonology*. New York: Academic Press. 135–68.
- Williamson, K. (1977). Multivalued features for consonants. *Language* 53. 843–71.

- Wood, S. (1982). *X-ray and model studies of vowel articulation*. Lund Working Papers in Linguistics 23.
- Yip, M. (1988). The OCP and phonological rules: a loss of identity. *Linguistic Inquiry* 19, 65–100.
- (1989). Feature geometry and cooccurrence restrictions. *Phonology* 6, 349–74.
- (1995). Tone in East Asian languages. In Goldsmith (1995), 476–94.
- Zec, D. (1994). *Sonority constraints on prosodic structure*. New York: Garland.
- (1995a). Sonority constraints on syllable structure. *Phonology* 12, 85–129.
- (1995b). The role of moraic structure in the distribution of segments within syllables. In Durand and Katamba (1995), 149–79.
- Zonneveld, W. (1993). Schwa, superheavies, stress and syllables in Dutch. *The Linguistic Review* 10, 59–110.

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