

Index

- Abler, 134–135
 acquisition, 1–2, 18, 20–21, 23–24, 41, 78,
 106, 109, 120, 185, 193
 logical problem of, 4
 adaptation, 11–12, 15–16, 37, 39, 49–51, 53,
 56, 58–60, 64–65, 72–73, 82, 110,
 188–189
 definition, 59–60
 process vs. trait, 59–60
 adaptive complexity, 76–77, 110
 Adger, 27, 29, 31–32
 Agree, 26–27, 31–32, 45–46, 71–72, 130,
 161–162, 164, 166–168, 172–174,
 177–180, 183
 as imperfection, 44–45
 locality of, 33
 agreement, 95–96, 106–107
 alarm call, 126, 131–132
 Alexiadou, 179–180
 allele, 7, 93–94
 Altenberg, 96, 103–104
 ambiguity, 170–171, 183
 amino acid, 99–100
 Anagnostopoulou, 179–180
 anaphora, 73–74, 77, 151–152
 angelfish stripes, 90–91
 animal communication, 137
 types of system, 145
 ape sign language, 15–16
 apoptosis, 94–96, 110
 appendix, 61–63
 Arnow, 114–115
 Arthur, 82–83, 86
 article, 133
 articulatory–phonetic interface, 25, 27, 42–43
 articulatory–phonetic system, 40, 44
 artificial fruit task, 141
 aspect, 95–96, 133
 atomicity, 46
 attention, 143–144
 auxiliary, 133
 β -globin allele, 67
 Baayen, 191
 baboon, 144
 Bach, 137–138
 bacteria, 84
 Baldwin effect, 95
 Ball, 14, 65
 Balter, 66–67
 bare output conditions, 22–23, 42
 bare phrase structure, 27, 71–72, 120, 174,
 176–177
 bareness, 22
 Battell, 106–107
 behaviourism, 18
 Benedicto, 176–177
 Bengalese finch, 121–122, 126, 145
 Bergman, 144
 Berwick, 129–130, 164, 182–183
 Bever, 137
 Bickerton, 12–13, 119, 129, 132
 Biederman, 138
 binding theory, 20–21, 105–107
 birdsong, 15–16, 121–122, 128, 146
 Bloom, 11–13, 59, 72–74, 76–79, 110,
 134–135
 Bloomfield, 18, 119–120
 Boeckx, 78, 175–176
 Bolker, 104–105
 Bonner, 83, 104
 bonobo, 126–127
 bottlenose dolphin, 15–16
 bounding theory, 20–21, 105–106
 brain re-alignment, 60–61, 63, 97–98
 Brannon, 140
 Brighton, 11–12, 80–81
 Brody, 161, 164–165
 Broekhuis, 22, 178–179
 Byrne, 124, 139, 141–142
 c-command, 30–31, 166–167
 Calabretta, 101–102, 104
 Call, 143

212 Index

- Calvin, 12–13, 129
 Campbell, 17–18
 Campbell's monkey, 126, 145
 Capranica, 126
 Carruthers, 105
 Carstairs-McCarthy, 12–13, 132
 case, 73–74, 77, 95–96, 101, 172, 176–178, 183
 case theory, 20–21, 105–107
 categorical perception, 129
 centre-embedding, 148
 chaffinch, 126
 chain, 161–162
 chameleon, 108
 Chametzky, 119
 Chater, 81, 89–90
 Cheney, 131–132, 144–145
 childbirth, 66–67
 chimpanzee, 140–141, 143
 Chomsky, 4–6, 13, 18–25, 27, 29–31, 33–35, 37–40, 44–45, 52, 59, 65, 70–72, 87–91, 105–106, 119–120, 134–135, 152–154, 158–162, 164, 166–169, 171–174, 176–177, 187
 pre-Minimalist Program, 75–76, 78
 Chomsky hierarchy, 148
 Christiansen, 113, 116, 148, 158–159
 chromosome, 7
 Clark, 100–101
 co-evolution, 85–86
 language and brain, 86
 language and theory of mind, 86
 co-indexation, 47
 co-occurrence restrictions, 73–74
 codon, 99–100
 Cognitive Grammar, 190
 Cohen, 88
 Coissac, 102
 combinatoriality, 155–156
 communication, 11–12, 15, 51–52, 57, 59, 65, 72–73, 77, 86, 109, 134, 150, 165–166, 188–189, 193
 referential, 145
 communicative effort, 152
 communicative function, 151
 competence, 6
 competence vs. performance, 189–192
 competing motivations, 59, 163–166, 170, 183, 187–189
 complementisers, 73–74, 77, 133
 complex action sequences, 141–143
 complexification, 110, 160–161
 complexity, 128, 151–152, 186
 bias for, 86–87
 computational, 79–81, 162–163
 genotypic, 79
 informational, 79–81
 measuring, 77–81
 of language faculty, 72–77
 of language faculty in narrow sense, 91
 phenotypic, 79
 complexity theory, 78–79, 81, 97
 compositionality, 126, 156–157
 compression, 81
 CON, 42, 188
 conceptual relations, 124, 129
 conceptual structure
 as recursive, 139–140, 144
 conceptual–intentional interface, 25, 27, 42–43
 conceptual–intentional system, 40, 44–45
 conceptualisation, 14–15
 connectionism, 191
 constraint ranking, 41–42
 Construction Grammar, 189–192
 context-free grammar, 117–128, 148
 context-sensitive grammar, 117
 control structure, 77
 control theory, 20–21, 105–106
 cooperation, 14–15
 Copernicus, 87–89
 Copy, 34
 coqui tree frog, 126
 Corballis, 14
 core vs. periphery, 192–193
 Cosmides, 105
 Couder, 64
 Crago, 16–17
 Cramer, 140–141
 creole, 152–153
 Croft, 165–166, 190–191
 Crombie, 88
 cross-linguistic variation, 20–21, 23–25, 33, 41–42, 120, 168–169, 171, 178–179, 185
 Cruse, 100–101, 190–191
 Culicover, 21, 152–153, 174, 183–184, 187–188, 191, 193
 cultural transmission, 130
 cyclicity, 34–36, 165–167
 D'Arcy Thompson, 64–65, 83
 dark matter, 89
 Darwin, 8, 11, 64–65, 83
 Dawkins, 55–56, 66–68, 76–77, 92–93
 De Boer, 14
 de Visser, 107–109
 Deacon, 11–12, 86, 95
 deep structure, 19–20, 25, 71–72, 75, 119–120, 175–176

- degeneracy, 52–53, 89–91, 97, 98, 95–103,
 105, 107, 185–187, 190–191
 and evolvability, 98–99
 and Minimalist Program, 100
 and modularity, 98–99
 tradeoff, 98–99, 102–104
 and robustness, 98
 as adaptive, 98–99
 examples, 99–100
 in complex systems, 99
 in language, 100–101
 in minimalist system, 161–163
 vs. redundancy, 97–98
- Dehaene, 140
- Dekkers, 22, 178–179
- Dennett, 12
- depth perception, 99–100, 138
- derivation, 27–36
 crash of, 26
 sub-derivation, 34
 vs. representation, 161
- derivation by phase, 33, 47–48, 163, 165,
 167–169, 172–174
- derivational morphology, 74–75
- Descartes, 4
- descriptive adequacy, 18–19, 185
- design, 49–50, 54–55, 66–67, 76–77, 87, 90,
 168–169, 186
 bad, 58
- Dessalles, 15
- Deutscher, 157–158
- Devlin, 148
- Diana monkey, 126
- differentiation, 98, 102–103
- Dik, 165–166
- directionality, 181–183
- discourse, 109
- discourse structure, 44–45
- discrete infinity, 113, 134
- divide-and-conquer principle, 115–116, 135,
 140
- DNA, 8, 79
- Dobzhansky, 10
- dog, 143
- dominance hierarchy, 144
- Dominey, 86
- Douady, 64
- double object construction, 167–168
- Dougherty, 23
- Dressler, 165–166
- Dreyer, 87–88
- drift, 8, 59–60, 67
- drosophila, 92–93
- Du Bois, 165–166
- duality of patterning
 and recursion, 133
 and semantics, 132
 as unique to language, 132–133
- duplication, 60–63, 68–69, 97–98, 102, 109
- E-language, 6, 191–192
- Ebner, 98
- economy, 21–23, 26–27, 32, 34–38, 40–42,
 71–72, 87, 100, 105, 109, 156–157,
 160–161, 165–166, 168–169, 182–183,
 191
 definition, 59–60
 derivational, 57
 global economy conditions, 162–163,
 174–175
 interpretation of, 40–41
 local economy conditions, 163
 of function, 63
 of process, 51–53, 80, 87–88
 of statement, 51–53, 80, 87–88
 of structure, 63
 representational, 57
- economy conditions, 47–48, 168
- Eddy, 143
- Edelman, 97, 99–100, 138
- edge detection, 138
- efficiency, 57–59, 65–66, 100, 105, 109, 161,
 166
 of communication, 77
 trade-off with memory, 152
- elegance, 90, 168, 191
- embedding, 113–117, 119, 121–123, 126–128,
 135, 137–138, 141, 143–146, 151,
 153–156
 self-embedding, 133, 142–143, 147,
 151–153
- empty category, 46
- Empty Category Principle, 47–49
- Enard, 16–17
- epistasis, 8, 79
- Epstein, 164
- escape hatch, 35
- eukaryote, 82, 104–105
- Euler, 89
- EVAL, 42, 188
- evaluation metric, 78
- Evans, 189–190
- Everett, 152–155
- evolution
 as change in information content, 92
 as increase in magnitude, 92
 as open-ended, 51
 as progression, 83–85
 as streamlining, 83, 94
 as undirected, 84–85

214 Index

- evolution (cont.)
 biological, 15
 complexification, 81–86, 160
 constraints on, 58–59, 69
 costs, 66–67
 cultural, 11–12, 15, 193
 direction of, 81–85
 gradual, 9–14, 50, 52–58, 60–62, 65–66,
 68–69, 72–73, 87, 90–92, 100, 105,
 108–109, 155, 183–184, 186–187,
 190–191
 lack of foresight, 62, 67–68
 major transitions, 82
 mechanisms of, 7
 misconceptions about, 9–10
 precursors, 14
 gestural, 14
 vocal, 14
 pressures of, 11
 requirements for, 7
 simplification, 82–85
 tree-like, 81–82
 evolutionary adequacy, 185
 evolutionary linguistics, 2–3, 6–7, 10–17,
 36–37, 88
 evolvability, 36–37, 96–110, 160, 185–186
 and Construction Grammar, 190–191
 and Optimality Theory, 188–189
 and Simpler Syntax, 193–194
 vs. adaptiveness, 96–97
 exaptation, 12–13, 15–16, 59, 90–91
 vs. adaptation, 12
 explanatory adequacy, 18–19, 178, 182–183,
 185
 expletive, 32, 34–35
 expressivity, 153–154, 156–157
 Extended Optional Infinitive theory, 106–107
 Extended Projection Principle, 28, 34–35,
 180–181
 Extended Standard Theory, 20
 extraposition, 175–176

 factorial, 115, 118–119
 feathers, 12
 feature checking, 29, 31–33, 35, 44, 47–48,
 171, 176
 feature interpretability, 28–30, 35
 Fibonacci sequence, 64
 Fillmore, 190
 finite state automaton, 117–122, 127–128
 finite state grammar, 128
 finite state syntax, 121–122
 Fisher, 93–94
 Fitch, 40, 59, 74, 112, 122–125, 128, 139–140,
 147–148, 152–155, 158–159, 176

 fitness, 7–8, 11–12, 15–16, 49–50, 53–54,
 59–61, 63, 67, 108
 absolute, 84–85
 inclusive fitness, 49–50
 relative, 84–85
 fitness landscape, 50–51, 55
 flight, 12
 flight feathers, 61–63
 focus, 74–75, 163–164
 Fodor, 105
 foraging, 124
 fossil evidence, 155
FOXP2, 93–94
 free word order, 175–176
 Freidin, 121
 Fukui, 181
 full interpretation, 161
 functionalism, 165–166

 Gabelentz, 165–166
 Galilean style, 88–90
 Gallistel, 140–141
 Gally, 97, 99–100
 games, 137
 tag, 137
 Gardner, 126–127, 132
 Gauss, 89
 Gell-Mann, 78–79
 GEN, 42, 188
 gene, 7–9, 23–24, 79, 102
 knockout experiment, 8–9
 transmission, 50
 gene net, 104
 gene selection, 67
 Generative Grammar, 5–6, 39, 41, 46, 113, 159
 history of, 17–21
 generative rules, 5–6
 generative semantics, 20, 23
 generativity, 6, 191–192
 genetic code, 99–100
 genetics, 16–17, 93–94
 genome, 193
 genotype, 7–8, 23–24, 55, 107–108
 genotype–phenotype map, 8–9, 101–105
 Gentner, 128
 geometry, 90
 Gerhart, 96, 101–102
 Gibbons, 66–67
 Gilbert, 104–105
 global optima, 9–10, 50–51, 55, 66–67
 goal, 31–32, 34–36, 45–46
 Goldberg, 190
 golden angle, 64
 Gopnik, 16–17
 Gordon, 134–135

- Gould, 9–10, 12–13, 61–62, 82–85
 government, 47, 177–178
 proper government, 47
 Government and Binding theory, 20–21,
 23–25, 27, 31, 40–41, 70–73, 76, 78,
 106–107, 120, 129, 171, 175–179,
 181–182
 grammar
 types of, 117
 grammatical function tier, 193–194
 grammatical specific language impairment,
 106–107
 Granadino, 93–94
 Gray, 139–140
 Greed, 174–175
 Green, 189–190
 Greenberg, 63
 Greenfield, 126–127
 Griffiths, 59–60, 90
 Grimshaw, 42
 group selection, 7–8, 67
- Haiman, 165–166
 Haldane, 7–8
 Halle, 78
 Hamilton, 7–8, 49–50
 Hansen, 103–104
 Hare, 143
 Harel, 114–115
 Haspelmath, 188–189
 Hauser, 37–40, 74, 112–113, 128–130,
 133–135, 137, 144–145, 147–148,
 152–155, 158
 Head-driven Phrase Structure Grammar,
 192–193
 heavy NP shift, 175–176
 Hendriks, 188
 Hertz-Pannier, 97–98
 heterozygous advantage, 67
 Heylighen, 83–85, 95
 hierarchy, 28–29, 141, 146, 148
 in behavioural patterns, 141
 in food preparation technique, 141–143
 hill-climbing, 50, 58
 Ho, 83
 Hockett, 132
 Hofstadter, 137–138
 Holmberg, 176, 179–181
 homeostasis, 108–109
 homozygosity, 67
 honeybee, 15–16, 126, 131–132, 145
 dance shapes, 132
 honeycomb, 64–65, 105
 Hopcroft, 117
 Hornstein, 25, 28–29, 31, 78, 130, 162
- Hox* genes, 92
 Hoyle, 92
 Huang, 182
 Hughes, 92
 Humboldt, 113
 Hume, 88–89
 humidity, 90
 humpback whale, 145–146
 Hurford, 14–15, 113, 126, 134–135, 144,
 151–152
 Husserl, 88
- I-language, 6, 191–192
 iconicity, 126, 165–166
 idiom, 189–193
 immediate constituent analysis, 119–120
 immunology, 99
 imperfection, 24–25, 32–33, 40–41, 45, 63
 apparent, 32, 43–46, 54, 57–58, 163–164
 in language, 43
 in morphology, 44
 in phonology, 44
 inefficiency, 63
 redundancy, 63
 true, 46
 vestige, 63
 Inclusiveness Condition, 26–27, 34, 71–72,
 120
 inefficiency, 68–69, 89–90
 inflection, 155–156
 inflectional morphology, 74–75
 inheritance, 50
 inheritance hierarchy, 189–190
 insulation, 12
 intention, 143, 145
 interface, 31–33, 35, 42–43, 45–46, 71–72,
 164–165, 172, 191
 interface conditions, 22–23, 42–43, 57–58
 interpretation, 26
 intonation, 127–128
 irregularity, 23
 iteration, 113, 128, 135, 137, 140, 147–148,
 158–159
 and semantics, 127–128
 as repetition, 115
 definition, 119
 examples, 115–116, 137
- Jackendoff, 5–6, 11–12, 14–15, 19, 23, 39,
 42–43, 72, 74–75, 106, 110, 120,
 122–123, 130–131, 133–135, 137–138,
 152–153, 155–156, 158, 174–175, 178,
 183–184, 187–188, 191, 193
- Jakobson, 18
 Jean, 64

Cambridge University Press

978-0-521-89530-9 - Language Evolution and Syntactic Theory

Anna R. Kinsella

Index

[More information](#)

216 Index

- Jeffery, 61, 82, 94–95
 Johansson, 9–10
 Johnson, 161–163, 166, 172
 juxtaposition, 151, 153
- Kako, 126–127
 Kalmár, 157–158
 Kanzi, 126–127
 Kaufman, 92
 Kawai, 140
 Kay, 190
 Kayne, 182
 kidneys, 60–63
 kin relations, 139, 143–144
 kin selection, 7–8
 King, 61
 Kirby, 11–12, 113, 165–166
 Kirschner, 96, 101–102
 Kitano, 104–105
 Kolmogorov complexity, 81
 Krauss, 89
 Kroch, 179
- Lai, 16–17, 93–94
 Lakoff, 20, 190
 Langacker, 165–166, 190
 language
 function of, 59
 language acquisition device, 152–153
 language evolution
 direction of, 86–87
 language faculty, 4, 6–7, 15–16, 36, 51,
 152–153, 156–157, 163–164, 170, 183,
 187–191
 broad sense, 40, 73–75, 93–94, 106–107,
 133
 evolution of, 155
 genotype of, 93–94
 narrow sense, 22–23, 37–40, 43–44, 46,
 50–52, 54, 73–76, 91–96, 105–107,
 109–110, 112, 129–130, 133, 159, 170,
 175–176, 191
 as recursion, 133
 properties of, 73
 Lappin, 161–163, 166, 172
 Lasnik, 21–22, 71–72
 Last Resort, 51, 162, 174–175
 laws of growth and form, 64–66, 90, 186
 Lefebvre, 178–179
 Legendre, 188–189
 legibility conditions, 42
 Leitão, 126
 lens convergence, 99–100
 Lerdahl, 122–123, 137
- levels of representation, 25, 70–71, 80,
 164–165, 191–192
 Lewontin, 78–79
 lexical array, 27, 29, 34, 161–162, 174
 lexical categories, 73–74, 77
 lexical features, 27–30, 42–43, 71–72, 177
 categorical feature, 29–30
 formal features, 27–28, 164, 168, 169
 ϕ -features, 28, 31–32
 case feature, 32
 EPP-feature, 28, 32–33, 35–36, 45–48,
 171–172, 177–181
 focus feature, 182–183
 interpretable, 28
 strength of, 33, 171, 178–179, 183
 uninterpretable, 28, 31–33, 44–48, 172,
 177–180
 wh-feature, 32–33, 47–48, 171–172,
 177–179, 182–183
 phonological, 27–28, 42–43, 131–132
 semantic, 27–28, 42–43, 131–132
 syntactic, 131–132
 unvalued, 31–32
 value, 32
- lexical insertion, 27
 lexical items
 vs. facts, 130–131
 lexical syntax, 125–128, 145
 lexicalism, 23
 lexicogrammar continuum, 192–193
 lexicon, 19, 27–30, 75, 129, 177
 and learning, 131–132
 as unique to language, 130–132
 size of, 131–132
- Li, 81
 Lieberman, 12–14
 limb bud, 104–105
 linguistic theories, 188–194
 linguistic theory
 constraints on, 16–17, 36
 acquisition, 16
 cross-linguistic variation, 16
 economy, 16–17, 87–88
 evolvability, 17
 neurological plausibility, 16–17
 parsability, 16–17
 simplicity, 16–17
- linkage, 67
 Liu, 114–115
 Lobeck, 113
 local optima, 50–51, 55, 58
 locality, 32, 71–72, 129–130, 166–167
 Locke, 4–5
 locomotion, 12–13
 Loeper, 114–115

- logical form, 25–28, 35, 42–44, 47, 51–52,
71–72, 161, 164–165,
176–178
- long-distance dependency, 116–117, 119, 135,
146–147
 nested, 117
- look-ahead, 35–36, 71–72, 173–174, 183
- MacGregor, 62
- macromutation, 13–14
- malaria, 67
- male nipple, 61–63
- Manzini, 179–180
- Marcus, 93–94
- Markman, 130–131
- Marler, 125
- Marr, 99–100, 104, 138
- Martasian, 61, 82, 94
- Martinet, 165–166
- Matsuzawa, 140
- Maynard Smith, 60, 79, 81–82
- McCawley, 20
- McLelland, 61
- Meillet, 18
- meiosis, 8
- meliorizing, 55–59, 69, 100, 157, 160
- memory, 191
- Mendel, 8
- mentalism, 19
- Menzel, 140–141
- Merge, 25–31, 34–35, 39–41, 44–45, 71–72,
105–106, 129, 161–163,
181–182
 internal, 33–34
- metabolic network, 108–109
- methodological minimalism, 52–53, 160–161,
183
- metrical foot, 122–123
- Meyers, 101–102
- Minimal Link Condition, 34–36, 47–48,
174–175
- minimalism
 with small 'm', 38
- Minimalist Program, 16
 and saltation, 91–96
 anti-minimalism, 183
 Galilean style, 89–90
 incompatibility with gradual adaptation,
 65–66
 methodology, 87–91
 non-biological evolution, 91
- Mithun, 157–158
- mixed-headed languages, 182
- Modern Synthesis, 8
- modularity, 20–21, 47–49, 75–80, 89–93, 97,
100–107, 170, 185–189, 193–194
 and evolvability, 102–104
 and Government and Binding theory,
 105–106
 and Minimalist Program, 105
 as adaptive, 104–105
 definition, 101–102
 examples, 104–105
 in complex systems, 104
 in language, 106–107
 external, 106
 internal, 106–107
 of mind, 105
- Montalbetti, 137
- morpheme, 133
- morphology, 123
- moth
 self-immolation, 68
- motion analysis, 138
- motor activity, 12–13
- motor sequence, 141
- mountain gorilla, 141–143
- move- α , 20, 177–178
- movement, 26–27, 32–34, 39–41, 45–46,
71–72, 106–107, 129–130, 161–164,
166–169, 172–174, 177–179, 182–183,
189–192
 as imperfection, 44
 as Merge, 164
 copy theory of, 130, 162, 164
 covert, 26
 head movement, 176–177
 improper, 34–35
 long-distance, 35–36
 obligatory, 175–176
 optional, 32, 175–176
 overt, 26
 overt vs. covert, 33, 171–172
 post-Spell-out, 33
 pre-Spell-out, 33
 successive cyclic, 35
 to distinguish deep and surface semantics,
 44–46
- movement theory, 20–21
- music, 137–138
 as hierarchical, 137
 key change modulation, 137–138
 lack of semantics, 137
- mutation, 7–9, 13–14, 49–50, 67, 77, 92–94,
96–100, 102, 107–108, 183–184
- mutation rate, 99
- mutual exclusivity bias, 130–131
- Myers, 61

218 Index

- Narins, 126
 Nash, 8–9
 nativism, 11–12, 23–24, 42, 191–193
 vs. empiricism, 5
 natural selection, 7–8, 11, 49–56, 58–62,
 66–67, 77, 82, 88, 94–97, 100, 104,
 110, 186, 188–189
 naturalness, 78
 nature vs. nurture, 18
 navigation, 124, 135–136
 in other species, 140–141
 Neanderthals, 66–67
 nearest neighbour rule, 140–141
 necrosis, 94
 Needham, 101
 negative concord, 182–183
 Nehaniv, 96
 neo-Darwinism, 51–52
 neo-neo-Darwinism, 51–52
 neural interference, 104
 neurobiology, 99
 neurolinguistics, 106–107
 neutral network, 98
 Newmeyer, 86, 125, 163, 166, 169, 182–183
 Newton, 88–89, 139
 Newtonian style, 88
 Nishihara, 138
 Nowak, 193
 nucleotide, 99–100
 number capacity, 134–135
 evolution of, 134–135
 in other species, 140
 numeration, 29, 162–163, 172
- object decomposition, 138
 object shift, 172–174, 176
 Occam's razor, 16, 48–49, 51, 87–88,
 193
 occlusion, 99–100
 Okanoya, 121, 128
 Oliphant, 131–132
 ontogeny, 94–95
 operator, 47
 optimality
 definition, 53–54, 59–60
 Optimality Theory, 41–42, 53–54, 165–166,
 188–189
 and impossibility of perfection, 42
 optimisation, 189
 organelle, 104–105
 Orzack, 53–55
 osmoregulation, 108–109
 Oudeyer, 14
 Ouhalla, 106–107, 176–179
- Paley, 67–68
 parameters, 20–21, 178–179, 182–183
 parasite, 82
 parataxis, 152, 154
 parcellation, 104
 parsimony
 Minimalist Program vs. Government and
 Binding theory, 48–49
 passive, 176, 193–194
 path creation, 135–136
 peacock tail, 64
 Peano, 134
 perceptual discrimination, 148
 perfection, 21–22, 37, 109
 aesthetic, 65
 constraints on achieving, 66–68
 availability, 66
 developmental, 66
 historical, 66
 definition, 40, 53–54, 59–60, 166–169
 gauging, 59
 in biological systems, 41
 in nature, 60, 64–66
 vs. economy, 57
 vs. optimality, 50–51, 53–57
 vs. optimality, meliorizing, satisficing, 56
 performance, 6
 Perlmutter, 109
 Perruchet, 147–148
 perspective, 143–144
 phase, 26–27, 34–36, 166, 168–169, 183
 as proposition, 35
 strength of, 172–173
 Phase Impenetrability Condition, 35, 174–175
 phenotype, 7–8, 50, 53–56, 58, 92, 96–97,
 100–101, 107–108
 phenylketonuria, 8–9
 phoneme, 122–123, 132–133
 phonological form, 25–28, 35, 42–44, 51–52,
 71–72, 161, 164–165, 176–177
 deletion rule, 34, 162
 linearisation, 182
 phonological syntax, 125, 145, 147
 phrasal categories, 73–74
 phrase structure, 155, 193–194
 as hierarchical, 119, 155–157
 history of, 119–120
 in music, 122–123
 recursive, 124, 127, 157
 phrase structure grammar, 70–71
 phrase structure rules, 19–20, 119–120,
 189–190, 192–193
 redundancy of, 120
 phyllotaxis, 64
 phylogeny, 94–95

- physics, 14, 18
 vs. biology, 90–91
 pidgin, 152–153
 pied-piping, 33–34
 Pinker, 11–13, 39, 59, 72–79, 110, 130–131, 133–135, 137–138, 158, 174–175, 178, 187
 Pirahã, 152–155, 157
 possessives, 153, 154
 subordination, 153
 pitch, 127–128
 Pittendrigh, 67–68
 plasticity, 107–108
 Plato, 4
 Platzack, 179–180
 pleiotropy, 8–9, 79, 93–94, 101–105, 110
 Pollard, 192–193
 Pollock, 171, 177–178
 polyhedral shells, 90–91
 Povinelli, 143
 Prague school, 166
 preadaptation, 12–13
 preadaptations for language, 14–15
 predation, 63
 predicate–argument structure, 44–45
 preliterate language, 157–158
 Premack, 140–141
 primates, 132, 140, 143
 Principle of Full Interpretation, 71–72
 principles, 20–21
 Principles and Parameters model, 20–21, 41, 183–184
 pro, 179–180
 pro-drop, 179–181, 183
 partial, 179
 probe, 31–36, 45–46
 processing, 185
 Procrastinate, 162, 174–175
 productivity, 156–157
 program vs. theory, 21–22, 43
 projection, 31–32
 prokaryote, 82
 pronouns, 73–74, 77, 133
 prosody, 74
 protolanguage, 155–157
 psycholinguistics, 106–107
 Ptolemy, 87–88
 pushdown stack, 116–117, 136–138, 147–150, 152, 158–159
 quantifier, 133
 Radford, 113
 Raff, 101–102
 raising, 193–194
 Reboul, 86
 recombination, 7, 97
 reconstruction, 35
 recurrent laryngeal nerve, 61–63, 67–68
 recursion, 19–20, 30–31, 37–38, 40, 74, 105–106
 and conceptual structure, 125–128, 157–158
 and memory, 114–117, 119, 147–148, 152, 158–159
 and Minimalist Program, 129–130, 159
 and morphology, 130–131
 and non-human cognition, 140–145
 and non-human communication, 145–147
 and non-linguistic cognition, 134–140
 and phonology, 123
 and protolanguage, 155–157
 and semantics, 118–119, 122–127, 148
 as compression, 152, 157
 as efficient, 151–152, 154
 as looping, 113
 as repetition, 114–115
 as unique feature of language, 134–149
 definition, 113–115, 119
 evolution of, 122–124, 157–158
 examples, 113–116
 lack of, 150–158
 nested, 114, 128, 135, 137–138, 145–150, 152, 155–156, 158–159
 possessives, 150–153
 pre-requisites for, 157
 procedural, 114–115
 representational, 113–114
 structural, 114–115
 subordinates, 150–153
 tail, 114, 127–128, 135, 137, 142–150, 152, 155–156, 158–159
 tail recursion vs. iteration, 118
 tail vs. nested, 116–117, 148
 types of, 116–118
 vs. hierarchy, 121, 145
 vs. iteration, 113–116, 127–128
 vs. Merge, 129
 vs. phrase structure, 119–128
 recursion-only hypothesis, 112, 133, 154–155, 159
 Red Queen Principle, 85
 Reddy, 139
 redundancy, 52–53, 57–65, 68–69, 75, 80, 83, 89–93, 95–97, 99, 102, 160–162, 168, 186–187, 193
 as adaptive, 62–63
 definition, 97–98
 functional, 60–61
 in lexical storage, 190–191
 regular grammar, 117–122, 148

220 Index

- replication
 of genes, 7
 Representational Deficit for Dependent Relations, 106–107
 Revised Extended Standard Theory, 20
 rewrite rules, 75, 121–122
 Rey, 147–148
 Rice, 106–107
 Ridley, 49–50
 Riebel, 126
 Ritchie, 128
 Rizzi, 179
 robustness, 52–53, 62–63, 89–90, 97, 99–100, 102–103, 107–109, 185–187, 191
 and adaptiveness, 108
 and evolvability, 108
 and Minimalist Program, 109
 definition, 107–108
 examples, 108–109
 genotypic, 107–108
 in language, 109
 phenotypic, 107–108
 Ross, 20
 Roussou, 179–180
 Rueckl, 104
 Russell, 139–140
 Russon, 124, 141–142

 Sag, 192–193
 Saito, 181
 saltation, 13–14, 79, 91–95, 110, 129, 160, 183–184
 and Minimalist Program, 14
 problems with, 92–94
 types of, 92–94
 Sampson, 4–5
 Samuels, 105
 sandlance, 108
 satisficing, 54–57
 Saunders, 83
 Saussure, 17–18, 39–40, 192–193
 Savage-Rumbaugh, 126–127
 Savoia, 179–180
 Schlosser, 101–102
 Schreuder, 191
 Schwab, 108
 scope, 47
 scrambling, 176
 search space, 35–36
 segmental phonology, 74
 selection, 7–8, 49–50, 67, 102, 108
 directional, 104
 stabilising, 104
 selectional restrictions, 29, 120
 selective pressure, 128

 self-organisation, 14, 90
 of vocalisations, 14
 of vowel systems, 14
 semantic equivalence, 118
 semantics
 deep, 44
 in other species, 125–127
 surface, 44–46
 serial verb construction, 182–183
 Seuren, 74–75, 164–165, 169, 174, 182–183
 sex differentiation, 61
 sexual selection, 7–8, 128
 Seyfarth, 131–132, 144–145
 Shapiro, 18–19
 short-term memory, 166
 Shortest Move, 47–48, 51, 162, 166
 sickle cell anemia, 67
 sign language, 109, 132, 186–187
 signal–meaning mapping, 6–7, 16, 22–23, 25, 39–40, 42, 48, 50, 54, 59, 65, 68–69, 160, 169–170
 Simon, 54–55
 Simpler Syntax, 174, 191–194
 simplicity, 36–37, 160, 169
 measuring, 37
 of language faculty, 70–72
 Skelton, 7–8
 Skinner, 18
 Slater, 126
 Smith, 61
 snow crystals, 21–22, 65, 105
 soap bubbles, 65
 Sober, 53–55, 59, 61–62
 social calculus, 12–13
 social cognition, 139–140
 in other species, 143–145
 social intelligence, 124–126
 social relations, 124
 Solé, 97, 100
 spandrel, 13, 15–16, 59
 unmodified, 13
 specific language impairment, 93–94, 106–107
 specifier–head relation, 31, 33, 166–167, 177–178
 Spell-Out, 25–26, 33, 35, 165–166, 172–173
 cyclic, 35
 Sperber, 105
 split Infl hypothesis, 177–178
 Standard Theory, 19
 starling, 128
 Sterelny, 59–60, 90
 stereopsis, 99–100
 stereoscopy, 138
 Sternberg, 166
 stimulus–response system, 145

- Stjepanovic, 175–176
 Stoller, 114–115
 strong generativity, 127–128, 146
 strong minimalist thesis, 52, 193
 structuralism, 18, 119–120
 structure dependence, 129–130
 sub-array, 166, 168
 sub-optimality, 42, 51–52
 subcategorisation, 120
 subject auxiliary inversion, 130
 subordination, 157–158
 substantive minimalism, 52–53, 160–161, 183
 successor function, 134, 140
 sunflower, 105
 superiority effects, 46–49
 surface structure, 19–20, 25, 71–72, 75, 175–178
 Suzuki, 8, 145–146
 syllable, 122–123
 symbolic reference, 14–15
 symmetry, 97
 Symons, 61
 synonymy, 100–101, 186–187
 syntactic devices
 as unique to language, 133
 syntactic theory, 3–4
 frameworks, 38
 syntactocentrism, 5–6
 Szathmáry, 79, 81–82
- Tabin, 92
tabula rasa, 4–5
 tamarin, 128, 147–148
 temperature, 90
 tense, 95–96, 106–107, 133
 terminating condition, 115–116, 135, 142–143
 Terrace, 126–127, 132, 140
 Theobald, 61
 theory of mind, 125–126, 139–140
 and deception, 139
 in other species, 143–145
 theta role, 182
 theta theory, 20–21, 47–49, 105–106
 tinkering, 100, 186, 193
 Tomasello, 143–144
 Tononi, 8–9, 97
 Tooby, 105
 tool use, 12–13, 124
 toolkit hypothesis, 152–153, 193
 topic and comment, 163–164
 topicalisation, 74–75, 175–176
 towers of Hanoi, 115
 trace, 34, 47
 trade-off, 59
- trait, 102
 transformational component, 75
 transformational rules, 19–20, 23, 175–176
 travelling salesman problem, 140–141
 Travis, 182
 Treisman, 138–139
 truth conditional semantics, 118
 Turing machine, 117
- Ujhelyi, 145
 Ullman, 117
 unaccusative, 176
 uniqueness, 15–16, 37–38, 73, 75–76
 of language, 129–133
 Universal Grammar, 4–5, 19, 42, 71–72, 78, 152–153, 163, 168
 universals, 1–2, 19, 24
 Uriagereka, 51–52, 90–91, 169, 172–173
- (virtual) conceptual necessity, 45, 70–71, 163–166, 169, 171, 174–178, 180–182
 van der Lely, 106–107
 van Valen, 85
 variation, 7–8, 51, 66, 96, 100–102
 verb raising, 33
 verb second, 176–179
 vervet, 131–132, 140–141
 vestige, 61, 89–90
 virus, 85
 visual processing
 global, 138–139
 local, 138–139
 visual system, 138–139
 Vitanyi, 81
 vocalisation, 2
 von Frisch, 65, 126
 Vrba, 9–10, 12
- Wagner, 96, 101–104, 108–109
 weak adequacy, 121–122, 127–128
 weak generativity, 146
 weak linkage, 97
 weak minimalist thesis, 52, 193
 Weinberg, 88–89
 Weiss, 114–115
 Wells, 119–120
 West-Eberhard, 10–11
 wh-in-situ, 24, 177–179
 wh-movement, 24, 32–33, 46–48, 116–117
 in Government and Binding theory, 47
 in the Minimalist Program, 46–49
 optional, 178–179
 successive cyclic, 173–174

222 Index

Whiten, 124, 139, 141
Wickramasinghe, 92
Williams, 61, 83
Wisn, 88
wisdom teeth, 61–62
Wolfram, 14
word order, 44–45
Worden, 124–126
Wright, 98

x-bar theory, 20, 70–72, 105–106, 120, 174,
181

Yamamoto, 95
Yamauchi, 95

Zeevat, 188
Zubay, 99–100
Zuberbühler, 126
Zuidema, 7–8