absorption and layering of emblems, pointing, 16–17
Acredolo, L., 169
action into ritual, evolution of, 116
action-action, 117, 118, 119, 191, see also action-based semiosis
action-based semiosis, 66, 116
action-simulation. See action-based semiosis
action-stub. See action into ritual, evolution of
Activating Process (Talmy linguistic category), 46
adaptation, 63, 65, 66, 70, 78, 166, 229
adult–infant interaction scenario, 74–76
affective-volitional tendency, 134–136
all-at-onceness, 130, 142
Allott, R., 120
alphabetical writing, versus ideographic, 164
alternatives (defanged) to Mead’s Loop/the GP
comparative semiotics, 202–203
gesture as speech supplement, 186–187
gesture from practical action, 190–191, see also origin of new actions
gesture–speech asynchrony, 188–190
grammar of gesture, 191–194
modules of gesture, 194–198
representationalism, 203–205
the lexical affiliate, 201–202
American Sign Language (ASL), 6, 83, 225
analog GP model, 200–201
analytic or isolating languages, 94
analytic semiosis of speech, 12, 28, 29 versus gesture, 31
Anthony, crib talk subject, 172
ape-language experiments, 97–101
apes oblivious to human gesture, 233
apes use hands to manipulate others, 73
aphasia, 153–156
Arbib, M., 58, 59, 66, 108, 165
Armstrong, D., 59, 95, 226
Arnold, J., 232
Ashley, R., 233
ASL–English bilingual test of gesture-first, 62
Atkinson, Q., 96, 111
autism, 158–159, 182
awakening, 118, 127
awareness of own gestures, 66, 74, see also self-aware agency; Mead’s Loop
axes of selection, combination, 21
Baars, B., 130, 136
babbling, 115, 120, 166–167
baby talk, 75, 166
Bachelder, B., 141
background. See context of speaking: field of oppositions
Baldyley, A., 138
Bahktin, M., 128
BBC Horizon, 227
beats, 14
Beattie, G., 188, 208, 209
Bechter, F., 225
Bellugi, U., 6
Bertenthal, B., 227, 228
Bickerton, D., 78, 112, 184
biological foundation of language, 76, see also bioprogram
bioprogram
bioprogram, 78, 86, 89
Bloom, R., 78
Bonobo People (film), 100, 227
bonobos, 64, 71–73
Bowerman, M., 169
brain development of children, 109
brain language areas, with imagery and context, 110
brain model, 58, 92, 107–110
brain model, convergence-point, 110
Braine, M. D. S., 171, 172
Bressem, J., 15
Broca’s area, 65, 67, 108, 110, 115, 154, 155, 163; 228
Brodmann’s areas 44 and 45. See Broca’s area
Brown, P., 169
Butcher, C., 156, 168, 169, 171
Butterworth, B., 188
Call, J., 71
Cartmill, E., 73, 75, 110
cartoon stimulus, 27
case grammar, 66
catchment, 33, 43, 69, 162, 192, 225
catchment-metapragnastic combination, 57
CD. See communicative dynamism
cerebellum, 109
Chafe, W., 130, 225
Chalmers, D., 130
character viewpoint, 80, 118, 179, 234
childrearing practices, chimpanzee versus human, 74
chimpanzee right-hand dominance with vocalization, 71
Chomsky, N., 21, 22
Cienki, A., 122
co-expressiveness, 4, 6, 8, 11–13, 14, 15, 16, 17, 19, 24, 25, 26, 27–32, 39, 40, 53, 62, 197
cognitive being, 21, 119, 129–130
cognitive linguistics, 203, 204, 206
cohesion, 43, 137, 158, 168, 173, 182, 183, 185, 192
cohesion, emergence of, 158
Cole, J., 101, 104, 105, 227, 228
combinatoric semiosis of speech, 12, 28, 29 versus gesture, 29
communicative dynamism, 126, 132, 232
comparative semiotics, 202–203
Condillac, É. de, 38, 115
conduit metaphor, 14, 109, 120, 122, 123, 124, 125, 152, 231
consciousness, 130–132
development of, 183
extended, 131–132
focal point of, 91, see also L-center
constructed gestures, 102
constructions. See unpacking
context. See context of speaking; field of oppositions
context of speaking, 32, 117, 143, 157, 202, see also field of oppositions
context shaping, 69, see also context of speaking; field of oppositions
continuities and discontinuities, in language development, 167–168
conventions of speech and thought, emergence of, 68
correspondence, 24, 88, 110, 144, 145, 147, 148, 188, 201, 209
Coolidge, F., 156
coordinative structures, 199–200
Coppola, M., 90
Corballis, M., 59, 63
Cowan, N., 138, 141
critical period, 113, 231
crows, ravens, 69, 226
Danish Sign Language, 6
daylight of language, 42, 49, 78, 88, 110, 165, 183
de Ruiter, J.-P., 187, 196
Deacon, T., 110, 112
definitions of gesture, 3–4
delayed auditory feedback, 159–161
Dennett, D., 232
Dessalles, J.-L., 59
dialectic, different kinds, 57
dialogicity, 128
differentiation, 33, 34, 35, 38, 43, 49, 50, 53, 54, 69, 70, 88, 109
dimensions of language, 3, 13, 19, 20–23, 89, 204
discontinuous language development, 167–168
discursive object metaphor, 14, 120, 123, 124
dogs, 154–155, 232
Down’s syndrome, 156
Dray, N., 88, 231
DS. See Down’s syndrome
dual semiosis, 5, 12, 13, 68, 168, 184
Dunbar, R. I. M., 144, 150
Duncan, S., 17, 41, 64, 100, 109, 125, 155, 174, 213, 210, 225, 227, 233, 235
Dunn, S. Jr., 145
Dunn, M., 95
dynamic dimension, 31–32, 58, 65, 68, 108
early gesture–word combinations, 169
economic “least effort, best result” SLOB model, 232
Eilfort, W., 186
embedding, 93
emblem, 7, 16, 17, 68, 119, 122–125
encoding metaphors, 10, 122
emblematicity, 125–126
emblems, Neapolitan, 9, 122–125
embodiment in two bodies, 152–153
emerging syntax, 77–78
Emily, crib talk subject, 172
Emmorey, K., 62
encounter scenarios, 77, 79, 89, 92
Enfield, N., 10, 191, 192
equiprimordiality of gesture, speech, 59, 69, 77, 165
evolutionary psychology, 229
fast ontogenesis. See Neanderthal
field of oppositions, 35, 40, 43, 48, 49, 50, 51, 53, 54, 55, 57, 58, 70, 88, 89, 109, 120, 137, 225, see also context of speaking
Figure (Talmy linguistic category), 46
Fillmore, C., 66
Firbas, J., 126, 187
first psychological predicate, versus first word, 78
first-person perspective, versus third, 129, 203, 210, 232
fMRI, 163, 218, 227
Fodor, J., 194
form standards, 10, 79, 87, 231
foxp2 gene, 229
Franklin, A., 227
Freyd, J., 68, 76, 77
frontal cortex, 110
fueling thought and speech, 3, 26, 32, 41, 57, 77, 156, 162, 205
Furuyama, N., 43, 152, 153, 224, 226, 227, 228
gallagher, S., 101, 107, 227
gap-filler, 13, 17, 64
gardner, B., 99
gardner, R., 99
gershkoff-stowe, L., 79, 83
gesticulation, 4, 7, 11, 169, 181, see also gesture continuum
gesture and memory loss, 142
as add-on, 19
as launching pad, 59
as public/social act, 65, 74
children's first, 168
definitions of, 3
gesture "names", 169
Gesture Continuum, 4–6, 41, 59, 169, 182, 184
details, 8–11
dimensions, 5, 16
examples, 6–8
semitic packages on, 5
gesture explosion, 174–175
gesture imagery, 29, 43, 65, 66, 68, 70, 73, 76, 77, 78, 79
gesture properties, 27–32
gesture semiosis, compared to language semiosis, 27–31
gesture timing with speech. See synchrony
gesture viewpoint, 174, 179–180
gesture-action, 101, 117, 129, 191, see also new actions
gesture-first, 58–65, 184
appearance in ontogenesis, 165
basic claim, 2
extinction of, 112, 113, 165
fatal problems with, 59–65
may have existed but could not have led to language, 2, 59
gesture-only. See gesture-first
gestures of bonobos, 71
gestures, do they stem from practical actions?, 116–119
gestures, hidden in written prose, 163–164
gill, S., 109, 153
global semiosis of gesture, 11, 12, 28, 29, 30, 31, 198, 201
versus speech, 31
goldin-meadow, S., 63, 78, 79, 83, 90, 142, 143, 156, 168, 169, 170, 171, 183, 226
goldman eisler, F., 189
goodwin, S., 169
goss, J., 229
GP. See growth point
groupo, 122, 123, 124
greenfield, P., 169
griffin, Z., 26
growth point, 2, 17, 19, 22, 23–32, 34–39, 41, 49, 57, 109, 225, see also unpacking
as empirical concept, 23
as hypothesis, 207–208
falsifiability and, 206
first-person perspective of, 210
for individual cases, 207
of music, 161
origin in mead's loop, 68
gunji, Y., 32
hale, K., 93
hand-axes, 229
hands, 4, 12, 28, 30, 44, 50, 51, 56, 69, 73, 75, 80, 102, 104, 107, 111, 117, 118, 119, 150, 151, 152, 153, 154, 155, 177, 179, 192, 227
hari, R., 108
Index

Heidegger, M., 129
Herder, J., 120
Hewes, G., 59
Hitch, G., 138
H-model. See cognitive being
homunculus problem, 232
how language began, 65
how utterances occur, 42–57
Hrdy, S., 74
Hurley, S., 181
Huttenlocher, P., 109
iconicity, 6, 8, 10, 14, 15, 41, 48, 51, 53, 69, 120
iconics. See iconicity
ideographs, 164
idiosyncratic semiosis of gesture, versus speech, 31
imagery
modeling of, 201
imagery problem, 201
imagery, definition of, 28
imagery–language unity. See language–thought unity
Imai, M., 32
immaturity at birth, human, 229
indexical ‘appropriateness-to’ goals, 69
indexical ‘effectiveness-in’ intentions, 69
Indo-European (IE), 93
Information-Packaging Hypothesis (IPH), 195–198
inhabitance of symbols, 20, 21, 22, 23, 79, 96, 97, 112, 128–130, 142, 153, 166, 168, 180, 183, 184
Institute of Cognitive Science and Technology, Rome, 156, 158
intention, 34, 54, 56, 58, 69, 70, 140, 147, 181, 192, 204
interactional entrainment, 109
interpersonal synchrony, 148–149
interrupted grasping, 169, see also action into ritual, evolution of
intuitions of completeness, 110, see also stop-order
invention and spread of agriculture, 93
Ishino, M., 10
it down, GP, 44–49
Iverson, J., 75, 170
IW case, 101–107, 191
Jakobson, R., 21
James, W., 134
Jeeves, 232
Johnson, M., 14
just-mastered-process, treated as unit, 173
Kanzi, ape language subject, 100, 227
Kaplan, B., 167, 234
Karmiloff-Smith, A., 173
Kendon, A., 1, 3, 4, 9, 10, 59, 73, 98, 111, 112, 115, 116, 122, 150, 202, 223, 226
Khoikhoi (Hottentot) language, 96
Kimbara, I., 148
Kinzi, K., 96
Kita, S., 32, 68, 174, 197
Klein, D., 228
Klima, E., 6
Krauss, R., 201
Kunisawa, T., 229, 231
Lakoff, G., 14
Langacker, R., 23, 77, 204
language areas of the brain, 67, 70, 71, 108, 110, 220, 227
Language in the Crib, 172
language loyalty, 96
language of children I
age of language–thought unity (3–4 years onward roughly), 173–184
age of pantomine and scaffolding (1 to 2 years roughly), 168–173
age of transition (2 to 3–4 years roughly), 170–173
language of children II
discontinuities, continuities in, 167–168, 170
early speech dominance in, 166–167
echoes of phylogenesis in, 165, 166
first gestures of, 168
limited depth of, 170
not cumulative, 167
origin-1 of, 168–173
origin-2 of, 173–184
proto-constructions in, 171–172
proto-growth points in, 172–173
language ontogenesis, three ages of, 168
language without Mead’s Loop, 97–101
language-slotted gesture, 6, 7, 16, 17, 41, 60, 64, 169, 188
language–thought unity, 26, 96, 172, 182
languge (competence), 20, 21, 22, 80, 88
Laotian fishermen, 192
Lawler, J., 26
Index

L-center, 131, 183, 184
Lenneberg, E., 76
Levell, W., 160, 230
Levinson, S.C., 95
Levy, E. T., 158, 172, 182, 231, 233
lexical affiliate, 45
Liddell, S., 41
Liebal, K., 119
Lieberman, P. , 109
Lieven, E., 172
linguistic change/stability, 90–92
linguistic value, 7, 21, 29, 31, 53, 79, 80, 84, 86, 93, 224
Loehr, D., 225
Lucky Charm, 226, 233
Lucy (fossil), 111, 112
MacNeilage, P ., 75, 115, 165
Maestripieri, D., 73, 75
Mandarin, 174, 177
mapping meaning onto temporal order, 92
Markel Fox, S., 186
material carrier, 19, 126–128, 231
Mayberry, R., 159
McCullough, K.-E., 192, 225, 227
McNeill, D., 59, 88, 99, 109, 122, 150, 155, 174, 209, 224
McNeill, N. B , 161
McNeill, R. L. B., 188, 224, 227
Mead, G. H., 32, 66, 70
Mead's Loop
GP properties, launched by, 67–70
natural selection of, 70–76
overview of, 65
straight mirror neurons and, 65–66
tests of, 218–222
twisted mirror neurons and, 66–67
Mead's Loop, cultural incultations by, 74
Mead's Loop
co-opting brain circuits, 67
unique brain signature, prediction of, 219
Mead's Loop, evolution of, by female adults, 74
Mead's Loop, sensitivity to increases over generations, 74
memory and gesture, 136–143
Merleau-Ponty, M., 20, 21, 128, 144, 203, 232
meta-gesture comment, 118
metaphor, 9, 10, 17, 22, 49, 118, 119
metaphoricity, 8, 9, 14, 42, 67, 70, 109, 119–122, 174, 180
distinguished from metaphor, 119
metapragmatics, 33–57, 58, 69, 137
metonymy, 9, 10, 14, 231
migration, 77, 80, 89, 95, 111, 227
migration over space and time, syntactic diversity and, 92–96
Miller, G. A., 141
mimicry, 26, 86, 91, 143, 144, 148, 149–152, 153, 157, 161, 170
mindset for language, 2, 168, 230
minimal unit, 19, 22, 26, 79
mirror neurons, 58, 59, 65, 66–67, 69, 70, 170, 232
Mithen, S., 163
modeling the growth point, 198–201
molecule analogy, 51
momentary cognitive being, coding of, 207
morphology, 78, 79–82
Morton, J., 131
mother-infant interaction scenario, 74–76, 170, 184
motion-event decomposition, 174, 175–177
motor theory, 87
mouth movements into speech, evolution of, 115
unlikely without hands, 154
mouth movements with manipulations, 73
Mowery, R., 160
Mr. A–Mr. B conversation, 144–148
Müller, C., 17, 117, 118, 127, 230
Müller-Lyer illusion, 195
musical growth points, 161–163, 233
natural selection, 49, 66, 70, 74, 76, 87, 115, 145, 166
Neanderthal, 112, 113, 156, 165, 184, 229, 230
critical period in, 230
fast development of, 113, 229
Neanderthal genome project, 229
Neapolitan gestures, 9, 122, 124
Nelson, K., 172
new actions, 67, 116, 117, 118, see also action-based semiosis
new language dynamic, 174
newsworthiness. See differentiation
Nicaraguan sign language, 90, 93
Nishitani, N., 108
Nobe, S., 5, 190
noncombinatoric semiosis of gesture, 29–31, 191
non-tautology, 208–218
nurture into nature, 74–76
Oberauer, K., 138, 140, 232
observer viewpoint, 118, 179, 234
Okrent, A., 6
old actions. See action-based semiosis
ontogenetic recapitulation, 168–173
heuristic value of, 165
open hand, 124
opposition, imagery to language, 28
ordinary synthetic languages, 94
origin of new actions, 114–119
origin of syntax, 58, 76–86
action control in, 86–87
scenarios for, 89–96
shareability and, 89
origin-1, 167, 171, 172, 184
origin-2, 167, 184
Özçaliskan, S., 183
Özyürek, A., 143, 144
Pagel, M., 90
Pagliuca, W., 160
pantomime, 6, 7, 16, 17, 19, 50, 63, 64, 68, 118,
169, 184, 223
paradigmatic value 1. See linguistic value;
speech denial experiment 1
parallel action, chimpanzees, 98, 100
Park-Doob, M., 192, 225, 227
parole (performance), 22, 23
Parrill, F., 38, 128, 179
Payrató, L., 231
P-center, 131
Pedelty, L., 109
Perner, J., 181
Perniss, P., 97, 227
phenomenology, 203, 204
phonetic symbolism, 120, 231
Pika, S., 69, 223
pivot-grammar, 156, 171–172,
184
pointing, 7, 10–11, 17, 41, 80, 168, 169, 184
Pollick, A., 71
polysynthetic languages, 94
Postcard Hypothesis (PCH), 196–198
pre-adaptation, 111, 226
precursor gestures, 64, 71–73
precursors of speech in apes
too restricted, 59
prefrontal cortex, 109, 110, 113, 156, 219
Pride and Prejudice (novel), 164
problems with gesture-first, fatal, 59–65
proto-growth points, 172–173
proto-language, 111, 112
proto-morphs, 80
psycho-Babel, 92–96
psychological predicate, 24, 33, 34–38, 40, 41,
42, 54, 57, 58, 69, 70, 109, 196
pulse, initial, 19
pulse, rhythmical, 14, 109, 131, 133, 134, 136,
138, 166
Quaegebeur, L., 26, 56, 130, 144, 201, 203, 226
rapid symbol sequences by trained apes, 73
raw material for Mead’s Loop. See precursor
gestures
recession, 78, 223, see also repeatability
reduction of gesture complexity, 175
redundancy, 25, 31
regulated-by-convention semiosis of speech,
versus gesture, 31
repeatability, 8, 29, 63, 79, 80, 87, 89, 100, 231
repeated storytelling method, 158, 182
representation, 129, 232
representationalism, 203–205
Reynaert, P., 203
right hand with vocalization, in chimpanzees,
71
right hemisphere, 109
Rizzolatti, G., 58, 59, 66, 108
Rossini, N., 78
Rowe, M., 169
Russell, K., 125, 226
Sapir, E., 94
Saussure, F. de, 7, 20–21, 22
Savage-Rumbaugh, S., 100
scaffolding, 60, 62, 63, 64, 169
Scheper, E., 201
science base of the growth point, 206–218
Sekine, K., 43, 173, 183
selection pressure, 51, 56, 76, 88, 90, 96, 184,
185
selection scenario, 60, 71, 75–76, 77, 86, 90, 96,
112, 145, 168, 170, 184, 229
self-aware agency, 75, 109, 174, 180–181, 229
self-response to gesture, 66, 74
semantic satiation, 128
semiosis/semiotic definition, 3
semiotic instability, 3, 22, 32, 57, 131
semiotic opposition, 3, 11–13, 16, 18, 22, 26,
31, 32, 62, 76, 77, 161, 162, 191, see also
semiotic instability
Senghas, A., 90
Severance, E., 128
shareability, 68, 76, 77, 88, 89
shared intentionality, 181
short-term memory, 138
Shovelton, H., 208, 209
sign language gestures, 41
significant contrast/departure, 33. See
differentiation
as part of thought, versus mechanical link-up, 196

but not fundamental, 32

syntagmatic value 2. See linguistic value;
speech denial experiment 2

synthetic semiosis of gesture, 11, 12, 28, 29, 31

Taiwanese Sign Language, 41

the language of music, 163

the last why, 134–136

The Man who Lost his Body (film), 227

The Mask of Anarchy (poem), 223

The Red Balloon (film), 158

The Way You Look Tonight (song), 162

the will, 134

gap to action, absent, 134

theater of the mind problem, 232

time and will, 133–134

time-line, 58, 110–112

tip of the tongue contagion, 232

Tomasello, M., 59, 71, 74, 170, 181

Tower of Babel, 92, 94

tching an outline. See action-based semiosis

Trudgill, P., 94

True-and-False-logic model of dialectic, 32

Tuite, K., 14

twist, 65, 66, 68, 69, 71, 73

two origins, 165, 184

origin-1, 168–173

origin-2, 173–184

unbreakable bonds of gesture and speech, 13–14

undoing language, as by-product of origin,
155–161

unity of opposites, 26, 73, 116, 128, see also
growth point

in ontogenesis, 173–184

University of Chicago gesture lab, 210, 227

unlikelihood of language without hands,
154–155
Index

unpacking, 3, 22, 42, 43, 49–51, 57, 58, 87, 153, see also how utterances occur
unpacking, breakdown, 88
verbs of motion vignettes, 83
vocabulary spurt, 170
vocal gesture, 60
vocal movement, 65, 68, 69
vocalization, 59, 67, 71
Volterra, V, 59
Vygotsky, L., 21, 26, 32, 33, 126, 134, 157, 169
warding-off emblem, 124
Warlpiri, 93
Warlpiri sign language test of gesture-first, 62
Washburn, M., 128
Washoe, ape language subject, 99
Watergate verbatim transcript, 164
Waterman, I, 101
Weir, R., 172
well-formedness criterion, 7, 9
intuitions of, 49
Werner, H., 167, 234
Wernicke’s area, 109, 110
Wilcox, S., 59, 95, 226
Wilkins, D., 214
Williams syndrome, 156–158
Wimmer, H., 181
Woll, B., 59, 64
working memory, 136
Wrangham, R., 110
WS. See Williams syndrome
Wundt, W., 131
Wynn, T., 156
Zbikowski, L., 162, 233
Zeno of Elea, 124