

## Index

Note: Page numbers in italics point to figures or tables.

- academic-industrial knowledge network
  - basis of, 75
  - center of, 74
  - competitive advantages from, 78–80
  - defined, 5
  - expansion of, 78
  - extent of, 56–8
  - French center in, 76n.81
  - maintenance of, 77
  - members, 71–2
  - migration within, 71–4
  - mutual benefits of, 70–1
  - origins of, 75–6
  - personnel exchange within, 212
  - relationships within, 72
  - ties within, 212–13
- academic journals, 67
- AGFA, 156–8, 159–60
- alizarin
  - market competition around, 137
  - natural, 210
  - patents, 90
  - prices, 25
  - race for, 122
  - synthetic, 25, 249–51
- Althoff, Friedrich, 167
- American Aniline Works
  - failure of, 104–5
  - history of, 123–5
  - U.S. market entry by, 120
- American Chemical Society, 64
- aniline purple. *See* mauve
- aniline red. *See* fuchsine
- antitrust policy, 225
- Association for Protection of the Interests of the German Chemical Industry, 66
- Association of Analytical Chemists, 64–5
- Association of British Chemical Manufacturers, 66
- Association of German Chemists, 65, 66
- Association of German Engineers, 180
- Association of Tar Distillers, 66
- azo dyes. *See* dyes
- Bayer, Adolf
  - epistolary communications, 77
  - intensity of work, 78n.83
  - move to Munich, 77
  - place in scientific network, 72
- bankruptcies, 225
- BASF
  - academic links, 70
  - alizarin patents, 88n.98, 135
  - alizarin process patent applications, 181n.221
  - Bayer's suit against, 135
  - chemist compensation, 154–5
  - chemists employed by, 92
  - market share, 42, 211
  - Perkin and, 250–1
  - suit against Levinstein, 135–6
  - testing by, 152n.182
- Bayer
  - academic links, 57, 71
  - acid production by, 141
  - AGFA, conflict with, 156
  - alizarin manufacture, 122–3, 126–7
  - American plant acquisitions, 149
  - application development by, 152
  - awards won by, 114
  - BASF, suit against, 135
  - chemist compensation, 154
  - chemist recruitment, 152
  - chemists employed by, 92, 100, 150
  - cost reduction measures, 143
  - diversification by, 142
  - dyes produced by, 140
  - efficiency improvements, 144–5
  - employees in, 100, 104, 145–6
  - Ewer & Pick, conflict with, 156–8
  - expansion to Leverkusen, 144
  - growth of, 138–9
  - intermediates acquisition by, 140
  - internationalization of, 129–30, 147, 149
  - Jäger versus, 98–101, 133
  - kickbacks from, 129, 149
  - Levinstein, relationship with, 159–60

- Bayer (*cont.*)  
 library of, 151  
 market share, 42, 211  
 marketing  
   ambition, 115  
   international, 128, 147  
   strategies, 112, 147–9  
 patent policy, 134, 155  
 patents obtained, 155  
 research efforts, 131–3, 150–2  
 research labs, 151  
 return on stock capital, 100  
 risks taken by, 121  
 Schoellkopf, relationship with, 159n.192  
 size at inception, 46  
 size statistics, 100  
 strategies of, 29–30  
 testing of products, 151–2  
 trade secrets, 134  
 university use by, 57, 121
- benzene ring theory, 201
- Benzopurpurin 4B  
 advantages of, 252  
 chemical structure, 254  
 invention of, 161
- Blackley Blue, 135
- Blackley Red, 135–6
- Blackmore, Susan J., 10n.10
- Bloede, Victor, 105, 121, 123–5
- Böttiger, Paul, 132
- Böttinger, Henry, 132, 169–70, 172
- boundaries, 11
- bribes, 149, 159
- Britain  
 business schools in, 59n.59  
 business staffing norms, 176–7  
 decline of, 7–8  
 dye importation, 37  
 dye patent ownership in, 38–40  
 dye producers, 42, 43, 44  
 economic development in, 46  
 industrialization, 49  
 population levels, 48  
 state machinery, 47  
 state's role in economy, 49, 50  
 textile industry, 49  
*See also* British dye industry; British educational system
- British Chemical Society, 65
- British dye industry  
 academia, interactions with, 57  
 chemist compensation, 155  
 decline of, 120, 195–8  
 institutional environment around, 215  
 market share, 32–33  
 self-defeating practices of, 176–7  
 shop floor practices, 80–3  
 threat to, 67–68
- British educational system  
 chemist education in, 172  
 enrollments, 55–6  
 industrial influences on, 172–7  
 inferiority of, 56  
 primary, 52n.47  
 Royal College of Chemistry founding, 54–5  
 secondary schools, 52  
 state support for, 58–9  
 strength of, 54  
 student population, 56
- Brooke, Simpson & Spiller  
 chemist recruitment, 152–3  
 demise of, 138–9  
 diversification by, 143  
 failures of, 101–3, 120, 146  
 patent interest, 158  
 workforce, 150
- BS&S. *See* Brooke, Simpson & Spiller
- Burt, Bulton & Haywood, 128
- business history, 6, 231
- business historians, 231
- business history literature survey, 231
- businessmen, 56
- Cambridge University, 55, 173, 208
- Carl, R. W., 98, 133
- Carnegie, Andrew, 177
- Caro, Heinrich  
 compensation of, 154, 155  
 in Ewer & Pick vs. AFGA case, 157  
 on industry staffing, 80, 81–2  
 place in academic network, 72
- Chandler, Alfred D., 4, 34–5
- chemical industries, 34
- Chemical Industry*, 67
- chemical societies, 63–5, 77
- Chemical Society, 64
- chemists  
 Bayer-employed, 92, 100, 150  
 British education of, 172  
 compensation of, 154–5  
 German overproduction of, 54  
 Hoechst-employed, 92  
 Jäger's hiring of, 133  
 Levinstein-employed, 150  
 Levinstein-lost, 153  
 migration of, 54, 73  
 Ph.D.s, 61–2, 212  
 recruitment of, 57, 120, 152–3  
 research-focused, 92
- Clemm, Carl, 119n.141
- coal production, 34
- coal-tar distillers, 66

- coevolution  
 defined, 21–3, 210  
 optimality and, 216–17  
 true versus spurious, 23  
*See also* evolution; evolutionary theories
- colleges. *See* universities and colleges
- colorists, 69n.71
- common law, 204–5
- competitive advantage  
 business strategies, 106, 115, 220–1  
 defined, 195n.237  
 dynamic capabilities view of, 198  
 economic theories for, 195–7  
 firm adaptability and, 197–8  
 firm competencies and, 197–8  
 institutional theory of, 218–21  
 institutions as sources of, 219  
 patent-law-based, 89–92  
 scientific-social, 78–80  
 shop floor practices and, 80–3  
 sources of, 195  
 timing, 106
- Congo red, 252, 254
- Crookes, William, 35
- Darwin, Charles R., 9
- Davis, George E., 57n.54, 141
- Dawson, Dan, 74n.75
- decision rules, 233–4
- ‘descent with modification,’ 10
- diazo reaction, 251–2, 253
- Duisberg, Carl  
 career, 57n.53  
 earnings, 154  
 education, 133n.161  
 efforts for education, 168–9, 172  
 managerial wisdom, 163  
 work for Bayer  
 early research, 57, 131–2  
 in Ewer & Pick vs. AGFA case, 157  
 patent administration, 134  
 planning Leverkusen, 144–5
- Durham, William H., 10–1
- dye industry  
 academic ties. *See* academic-industrial knowledge network  
 aniline plant construction costs, 219  
 aniline producers’ demise, 108n.125  
 beginning of, 2, 32, 244–5  
 cartels within, 160–1  
 chemist compensation, 153–5  
 chemist recruitment, 153  
 coevolution with technology, 210–11  
 coevolution with universities, 211–13  
 coevolutionary processes in, 214–16
- competition in, 25, 118–19  
 construction costs, 146–7  
 dominance within, 32–3, 43, 120  
 dye population evolution, 200–1  
 dye varieties from, 140, 200  
 early entry into, 106  
 educational links with, 56–8  
 educational prerequisites for, 62  
 evolution of, 201–3  
 firm entry/exit statistics, 42, 43, 45  
 ingredient acquisition, 106–8  
 internationalization of, 114–15, 129–31  
 managerial wisdom and company success, 162–3  
 market share within, 2, 214–15  
 market size, 25  
 marketing by, 109–14, 128–31  
 patent strategies, 155  
 plant costs, 146–7  
 plant longevity, 227  
 price competition, 25  
 price-fixing within, 161  
 producer density, 44  
 production by country, 38  
 production concentration in, 42–3  
 production process development, 108–9  
 production volume, 25, 36–7  
 publications distribution by nationality, 211  
 research, 115–17, 131–3, 150–2, 163  
 scientific development of, 120–1  
 scope economies in, 26  
 shakeout in, 44n.41  
 shop floor practices, 80–3  
 simulating, 236  
 success-failure statistics, 202  
 supply and demand in, 34  
 technology in, 125–6, 199–201  
 threat to British, 63, 68  
 winners in, 29–30  
*See also* British dye industry; German dye industry; United States dye industry
- dye industry database, 258–68
- dye-making, synthetic  
 economics of, 24  
 nature of process, 24–5, 245–6
- dye use by country, 38
- dyeing techniques, 242–3
- dyes  
 azo  
 chemistry of, 253  
 development of, 251–2  
 discovery of, 79  
 success of, 139–40  
 creating new, 26–7, 115–16, 200  
 economic consequences of, 257

- dyes (*cont.*)  
 natural  
   history of, 241  
   market for, 106  
   production, versus synthetic, 121  
 number of, 25, 247–9  
 performance dimensions of, 240–1  
 population over time, 200  
 prices, 25  
 sulfur, 140–1  
 synthetic  
   diazo-reaction-based, 253  
   early, 244–7  
   numbers available, 247–9  
   raw materials for, 245  
   relations between, 246  
 uses of, 239–40  
 world production and consumption,  
   37–38
- economic growth, 4, 180n.216, 221  
 economic historians, 231  
 economic history literature survey, 231  
 economic success, 3–5  
 economies  
   ‘creative destruction’ in, 225  
   institutions’ effects on, 3  
   leading, elements of, 223  
   optimal, coevolution and, 216–17  
   stability amidst reforms in, 224–5  
   state’s role in, 49–50
- educational systems  
   *See* British educational system; German  
   educational system; United States  
   educational system; universities and  
   colleges
- espionage, 119n.141
- evolution  
   biological, 199, 224  
   inefficiency of, 226  
   organic, 13n.14  
   social/cultural, 199, 221  
   *See also* coevolution; evolutionary theories
- evolutionary economics  
   literature review, 230–1  
   research questions for, 221–9
- evolutionary epistemology, 9n.10, 10–11
- evolutionary systems, 20–1
- evolutionary theories  
   biological, 199  
   key point of, 9  
   nature of, 12–13, 14–15, 213  
   purposes of, 15  
   requirements for, 10–11, 199  
   use of, 221  
   *See also* coevolution; evolution
- Ewer & Pick, 156–8  
 exhibitions, 113–14  
 exponential growth, 235
- firms  
   capabilities of, 197–8, 218–21  
   causes of success in, 16  
   collective action by, 179–85, 213, 227  
   creation of, 222  
   density statistics by country, 44  
   development of, 4  
   employee migration between, 227  
   entry/exit statistics, 41–5  
   inertia in, 229  
   knowledge diffusion across, 227  
   managers, 228–9  
   national context and activity type for, 220  
   resource-based theory of, 6–7, 220  
   shaping the institutional environment of, 220–1  
   strategies for, 220–1  
   subsidies for, 225  
   *See also* organizations
- Fischer, Emil, 145, 169, 170
- fitness landscapes, 22
- fuchsine  
   development of, 116  
   German production of, 98  
   litigation over, 117–18, 119  
   market for, 108  
   popularity of, 106  
   smuggling into U.K., 118
- General Chemical, 84  
 General Motors, 16  
 German Association for Patent Protection, 181  
 German Chemical Industry Association, 183–5  
 German Chemical Society, 64, 65  
 German dye industry  
   academia, interactions with, 56–7  
   adaptability of, 28  
   basis for success of, 52–4  
   competition within, 137  
   failed firms in, 29  
   home market, 48  
   institutional environment around, 215  
   market share within, 32–3  
   merger proposed for, 160–1  
   patent issue organizing within, 183–5  
   protectionist efforts, 183–5  
   rise of, 195–8  
   shop floor practices, 80–3  
   workforce in, 91–2
- German educational system  
   Americans training in, 60  
   chemist overproduction in, 54  
   chemistry faculty, 53

- chemistry Ph.D.s, 61  
enrollments, 55–6, 59  
expenditures for, 165  
industrial influences on, 167–72  
polytechnic schools, 55  
primary/secondary, 52  
research focus of, 53  
state support for, 58–9  
student population, 56
- German Patent Reform Act, 89
- Germany  
dye exports, 38  
dye patent ownership, 38–40  
dye producers, 42, 43, 44  
economic development in, 46  
economic unification of, 47–8  
history, 47  
industrialization, 49  
inventor's rights in, 88n.101  
patent union entry delay, 88  
population levels, 48  
state support of education, 58–9  
state's role in economy, 49–50  
*See also* German dye industry; German educational system
- Gibbs, Josiah Willard, 61n.61
- Graebe, Carl, 121–2
- Great Britain. *See* Britain
- Green, Arthur, 158
- Griess, Johann Peter, 132
- Hayek, Friedrich A., 204–5
- Heller & Merz, 43
- historians, 231
- Hoechst  
alizarin market and, 121–2, 137  
chemists employed by, 92  
market share, 42, 211  
patent holdings, 91  
testing by, 152n.182
- Hofmann, August Wilhelm  
British royal connections, 75, 76  
career, 56–7  
ethics questioned, 183  
industry report by, 113  
move to Britain, 54  
patent law efforts, 181–3  
place in network, 71, 72  
prediction of, 32, 34  
return to Germany, 76  
role in German Chemical Society, 77  
work intensity, 78n.83
- Holliday. *See* Read Holliday
- Hudson River Aniline, 43
- Hull, David L., 9n.10, 11
- Imperial College, 59, 175–6
- Indanthrone, 255
- indigo  
natural  
British stake in, 67–8  
history of, 241  
Indian exports, 257  
Indian industry for, 67, 210  
price of, 257  
synthetic, 253–6  
chemistry of, 254–5  
competing dyes, 255  
development of, 140n.170, 253–5, 256  
prospects for, 63
- industrial districts, 63
- industries  
evolution of  
firm failures in, 222, 226  
issues in, 7  
selection processes, 12  
units of selection in, 12–13  
evolutionary explanations of development, 222–3  
firm populations versus plant populations, 227  
leadership within, 3, 201–2  
literature review, 230–3  
minimum number of firms in, 225  
nations dominating, 33  
regulation of, 226
- institutional theory, 7, 30, 194, 199, 200
- institutions  
competitive advantage sources, 219  
defined, 19, 204  
evolution of, 203–9  
influences of, 3–4, 19–20  
novelty-generating, 223  
organizations versus, 19n.20  
typology of, 220–1  
Veblen's definition, 219n.268
- intellectual property right regimes. *See* patent laws
- interactors, 11, 14
- intermediates, 82, 140
- International Monetary Fund, 237–8
- inventor's rights, 88n.101
- Jäger  
beginning of, 107  
business emphasis, 123  
chemist hiring by, 133  
diversification by, 142  
eclipse of, 127, 130–1  
ingredient acquisition by, 107  
marketing by, 112–13  
overview of, 98–99  
patent dearth of, 134  
safflor carmine dye preparation, 113–14  
success of, 106

Cambridge University Press  
 978-0-521-81329-7 - Knowledge and Competitive Advantage: The Coevolution of Firms,  
 Technology, and National Institutions  
 Johann Peter Murmann  
 Index

[More information](#)

- Jäger, Emil, 133  
 Jäger, Otto, 107, 130  
 Japan  
   auto industry production system, 81  
   education policy, 74n.74  
 Johns Hopkins University, 61  
*Journal for Applied Chemistry*, 67
- Kaiser Wilhelm Institute for Chemistry, 170–1  
 Kaiser Wilhelm Institute for the Advancement of  
   Sciences, 171  
 Kauffman, Stuart A., 22  
 kickbacks, 118, 129, 149
- language development, 9–10  
 law  
   common law, 204–5  
   theories on changes in, 205
- Levinstein, Hugo, 111  
 Levinstein, Ivan  
   background, 102  
   business sense, 136  
   early business efforts, 101–3  
   efforts for education, 174  
   limitations of, 162  
   on British patent law, 84  
   patent reform efforts, 188–91
- Levinstein (the company)  
   AGFA, relationship with, 159–60  
   alizarin market and, 123  
   BASF's suit against, 135–6  
   Bayer, relationship with, 159–60  
   chemist recruitment, 57, 120, 152  
   chemists employed by, 150  
   chemists lost by, 153  
   diversification by, 142–3  
   expansion by, 146, 149, 150  
   inorganic chemical production, 141  
   intermediates production, 140  
   international representation, 111  
   management of, 139  
   market share, 42  
   marketing by, 111–12, 129  
   mistakes of, 139  
   move to Britain, 115  
   name of, 129  
   number of dyes produced, 140  
   overview of, 101–3  
   patent litigation, 158  
   patent practices, 135  
   workforce, 145
- Lewontin, Richard C., 9n.1  
 Liebermann, Carl, 121–2  
 Liebig, Justus von, 32, 53–4, 75  
 litigation, 136–7  
 Little, Arthur D., 178
- lobbying, 179–85, 213, 220–1  
 Lunge, Georg, 57, 141  
 Lutz, Louis, 130
- madder, 25, 121, 242  
 magenta. *See* fuchsine  
 management  
   literature survey, 232  
   scholarship on, 237  
   strategic, 197–9
- managers  
   as selection agents, 15n.18  
   challenges to, 16  
   company success and, 162–3  
   illusions of, 237  
   leadership from, 229
- Manufacturing Chemists' Association, 66  
 marketing, 109–14, 128–31  
 Marshall, Alfred, 1, 194  
 Martius, Carl Alexander von, 72, 103n.119,  
   183  
 Massachusetts Institute of Technology,  
   207–8  
 master system, 126  
 mauve (aniline purple), 109–10, 115, 117  
 McCraw, Thomas K., 48n.43  
 Meldola, Raphael, 95, 158  
 memes, 10n.10
- models  
   history-friendly, 236–7  
   mathematical, 235–6
- mordants, 242  
 Morrill Act, 207
- national chemical society membership, 64  
 nationalism, 58n.56  
 Nelson, Richard R., 219n.268  
 new institutionalism, 7  
*Newspaper for Chemists*, 67
- organizational ecology, 6, 197  
 organizational ecology studies, 230
- organizations  
   basis of action of, 15–16  
   causes of success in, 16  
   institutions versus, 19n.20  
   research issues regarding, 233–4  
   rigidity of, 16  
   routines in, 14, 15–16, 233–5  
   *See also* firms
- Owens College, 173–4  
 Oxford University, 55, 173, 208
- patent laws  
   as evolutionary system, 20  
   British, reform of, 185–92

- competitive implications of, 89–92
- German
- British and American versus, 87–8
  - dye-industry-relevant, 89, 181
  - entities protected by, 133
  - inception of, 179–83
  - industry's role in amending, 185
- individuals among, 20
- industry influences on
- British, 185–92
  - German, 179–85
- populations of, 20
- working clauses, 88, 187–91
- patents
- as success co-factor, 86
  - criteria for award of, 88
  - fuchsine, litigation over, 117–18, 119
  - German requirements for, 87
  - judicial bodies over, 87
  - litigation over, 90
  - movement to eliminate, 180n.216
  - number reaching term, 85–6
  - ownership by country, 38–41
  - protection of
    - British, 29
    - effectiveness of, 85
    - German, 29
    - timing of, 29
- Paulsen, Friedrich, 58n.58
- Perkin & Sons
- alizarin production, 127
  - beginning of, 32
  - ingredient acquisition by, 106–7
  - marketing by, 109–10, 114–15, 129
  - mauve licensing, 119
  - mauve patent and, 117
  - sale to BS&S, 127–8
- Perkin, Dix, 101
- Perkin, William Henry
- alizarin production and, 127
  - BASF and, 250–1
  - choice to leave industry, 218–19
  - marketing by, 109–10, 114–15, 129
  - on start in industry, 94–5
  - pioneering work, 2
  - reputation, 35
  - retirement, 103n.119, 127
- Playfair, Lyon, 56
- price-fixing, 161
- printing techniques, 243
- professional organizations, 63–5
- public policy, 16
- 'raw capabilities,' 7, 198, 219
- Read Holliday
- chemist compensation, 153n.185
  - expansion abroad, 36, 115
  - market share, 42
  - number of dyes produced, 140
  - success strategy of, 120
- red azo dye, 132
- replicators, 11, 14
- Reports of the German Chemical Society*, 67
- research, 115–17, 131–3, 150–2
- Roccelline, 135–6
- Roscoe, Henry E., 57n.55, 173–4, 175
- routines, 14, 15–16, 233–5
- Royal College of Chemistry, 54–5, 62, 173
- Rudolf Knosp, 114
- Rumpf, Carl
- business sense of, 98, 126
  - career, 130, 155n.188
  - initiative of, 123, 131, 163
- sales agents, 128–9
- Sampat, Bhaven N., 219n.268
- Schoellkopf Aniline & Chemical Company
- acid production by, 141
  - Bayer, relationship with, 159n.192
  - black convention and, 161
  - black dyes from, 141
  - chemist recruitment, 152
  - intermediates acquisition by, 141
  - market share, 42–3
  - overview of, 103–4
  - patenting by, 159
  - U.S. market entry, 120
  - workforce, 146
- Schoellkopf, Jacob. F., 121, 123
- schools. *See* universities and colleges
- Schuman, Frank, 125
- Schumpeter, Joseph A., 1, 238
- selection, 11–14
- silk consumption, 104
- Simpson, Maule, & Nicholson
- licenses obtained by, 117
  - litigation over fuchsine, 117–18, 119
  - nitrobenzene and, 107
  - productions techniques and, 108, 109
  - status of, 103
- SM&N. *See* Simpson, Maule, & Nicholson
- smuggling fuchsine, 118
- social Darwinism, 9
- social environments, 4–5
- societies, 224
- Society of Chemical Industry, 57, 65, 66
- Society of Dyers and Colourists, 66
- Stinchcombe, Arthur, 16n.19
- strategic trade theory, 197
- sulfuric acid plants, 141
- synthetic dye industry. *See* dye industry

- tariffs, 68, 192–3, 215  
 tarring and feathering, 119n.141  
 technology  
   coevolution of dye industry with, 210–11  
   dye production, 125–6  
   evolution of dye, 199–201  
   evolutionary theories of, 17–19  
 textile industries, 34, 49  
 textiles, coloration of, 241–3  
*Theory of Moral Sentiments*, 2  
 Tocqueville, Alexis de, 60n.60  
 trade journals, 67  
 trade organizations, 66, 69  
 trade secrets  
   disappearance of, 179  
   impossibility of, 179  
   patents versus, 134, 182  
   protection tactics, 86n.91, 137  
   theft, 159  
 Tust, Eduard, 122
- Union for the Protection of Industrial  
 Property, 88–9  
 United Kingdom. *See* Britain  
 United States  
   dye imports, 37  
   dye patent ownership in, 38–41  
   dye producers, 42, 43, 44  
   economic conditions in, 48  
   economic development in, 46  
   industrialization, 49  
   population levels, 48  
   state machinery, 48  
   state's role in economy, 49  
   *See also* United States dye industry; United  
   States educational system  
 United States dye industry  
   Bayer and, 129  
   delayed beginning, 104  
   early, 33, 36  
   employees in, 104  
   institutional environment around, 216  
   intermediates importation, 37  
   social organization within, 83–4  
   United States educational system  
     chemistry Ph.D.s, 61–2, 212  
     enrollments, 60  
     expenditures on, 61  
     graduate chemistry in, 61  
     growth of, 60–2  
     industrial influences on, 177–8  
     Land Grant colleges, 60  
     quality of, 59–60  
     state support for, 61  
   units of environmental interaction, 12  
   units of replication, 12  
   units of selection, 12–13  
   units of transmission, 10  
 universities and colleges  
   American, 207–8, 224  
   as agents of novelty, 223  
   birth of new, 207–8  
   British, 54–5, 207  
   chemistry chairs in, 208, 209  
   chemistry instruction in, 208  
   closure of, 20–1, 206–7  
   coevolution with dye industry, 211–13  
   enrollments in, 209  
   evolutionary transformations, 20–1, 205–9  
   factors in development of, 206  
   first, 205–6  
   German, 53, 207, 224  
   German polytechnic, 55  
   nature of, 21  
   Scottish, 206n.247  
   student populations, 56  
 University of Bologna, 206
- Veblen, Thorstein, 2, 219n.268
- Weskott, Friedrich, 99  
 Wilkins, Mira, 231  
 Williamson, Oliver E., 220–1  
 Witt, Otto, 71, 170, 201  
 working clauses, 88, 187–91  
 Wrigley, Julia, 59n.59
- Young, Allyn, 215n.262