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Appendix from S. J. Arnold, "Phenotypic Evolution: the Ongoing Synthesis"

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A Sample of 59 Influential Synthetic Works in Evolutionary Biology

The 59 works in table A1 represent a systematic sample rather than an exhaustive inventory. Works were included if they were synthetic and influential. I judged works to be synthetic if they were integrative, book-length treatments that provided broad coverage of an important topic in evolutionary biology and influential if they had accumulated at least 500 citations in Google Scholar as of June 4–5, 2012. To ensure that a broad range of contributors was included, I generally included only one or two works by a single author. To achieve coverage for all decades since 1859, I sometimes deviated from the criteria just listed. For example, I included nine books by Darwin to achieve coverage for the period 1859–1881. I included several works with less than 500 citations to achieve coverage for the period 1886–1923. I included two highly influential papers that were published in the period 1924–1931. I included one important book from 2001, even though it had received less than 500 citations. A number of other books published since 2004 were not included because they had not accumulated 500 citations. Several limitations of the sample should be kept in mind when interpreting the graph shown in figure 1: (1) Because Google Scholar is a product of the corporate world, the methods it uses to compile citations cannot be scrutinized. (2) No corrections were made for the number of years that have elapsed since publication or for the ever-expanding population of scientists who cite published articles. (3) Some important, meritorious works are not included in the sample. For example, Futuyma's important textbook, first published in 1979, is inexplicably absent from Google Scholar's compilations. In other cases, I undoubtedly overlooked important works.

Table A1. Citation counts for 59 influential synthetic works in evolutionary biology

Author(s)	Publication year	Abbreviated title[a]	Google Scholar citations[b]	Cumulative citations
Darwin, C.	1859	Origin of species	21,038	21,038
Darwin, C.	1862	Orchids	748	21,786
Darwin, C.	1868	Variation	1,511	23,297
Darwin, C.	1871	Descent of man	10,970	34,267
Darwin, C.	1872	Expression of emotions	8,635	42,902
Darwin, C.	1876	Cross and self fertilisation	1,086	43,988
Wallace, A. R.	1876	Geographical distribution	734	44,722
Darwin, C.	1877	Forms of flowers	1,307	46,029
Darwin, C.	1880	Movement in plants	948	46,977
Darwin, C.	1881	Vegetable mould	1,042	48,019
Cope, E. D.	1886	Origin of the fittest	166	48,185
Wallace, A. R.	1889	Darwinism	334	48,519
Cope, E. D.	1896	Primary factors of evolution	177	48,696
Matthew, W. D.	1915	Climate and evolution	452	49,148
Willis, J. C.	1922	Age and area	264	49,412
Morgan, C. L.	1923	Emergent evolution	433	49,845
Yule, G. U.	1924*	A mathematical theory	878	50,723
Fisher, R. A.	1930	Genetical theory of nat. sel.	12,618	63,341
Wright, S.	1931*	Evolution in Mendelian pop.	5,493	68,834
Haldane, J. B. S.	1932	Causes of evolution	1,463	70,297
Dobzhansky, T.	1937	Genetics and the origin	4,591	74,888
Goldschmidt, R.	1940	Material basis of evolution	1,009	75,897
Mayr, E.	1942	Systematics and the origin	4,380	80,277
Huxley, J.	1942	Evolution the modern synth.	1,891	82,168
Simpson, G. G.	1944	Tempo and mode	1,684	83,852
Schmalhausen, I. I.	1949	Factors of evolution	841	84,693
Stebbins, G. L.	1950	Variation and evol. in plants	3,506	88,199
Rensch, B.	1960	Evol. above the species level	758	88,957
Mayr, E.	1963	Animal species and evol.	7,354	96,311
Ford, E. B.	1964	Ecological genetics	964	97,275

Table A1 (*Continued*)

Author(s)	Publication year	Abbreviated title[a]	Google Scholar citations[b]	Cumulative citations
Williams, G. C.	1966	Adaptation and natural sel.	5,631	102,906
Romer, A. S.	1966	Vertebrate paleontology	2,346	105,252
Crow, J. F., and M. Kimura	1970	Population genetics theory	4,359	109,611
Lewontin, R. C.	1974	Genet. basis of evol. change	2,863	112,474
Boucot, A. J.	1975	Evol. and ext. rate controls	709	113,183
Dawkins, R.	1976	Selfish gene	13,783	126,966
Gould, S. J.	1977	Ontogeny and phylogeny	3,966	130,932
Maynard Smith, J.	1978	Evolution of sex	2,423	133,355
Maynard Smith, J.	1982	Evol. and theory of games	7,207	140,562
Dawkins, R.	1982	Extended phenotype	3,605	144,167
Kimura, M.	1983	Neutral theory of mol. evol.	5,974	150,141
Wright, S.	1984	Evolution and genet. Vol. 3	6,267	156,408
Endler, J. A.	1986	Natural selection in the wild	2,779	159,187
Nei, M.	1987	Molec. evolutionary genetics	10,855	170,042
Avise, J. C.	1994	Molecular markers	4,641	174,683
Cavalli-Sforza, L. L., P. Menozzi, and A. Piazza	1994	Hist. and geogr. of genes	3,324	178,007
Charlesworth, B.	1994	Evol. in age-structured pop.	2,193	180,200
Andersson, M. B.	1994	Sexual selection	7,080	187,280
Hillis, D. M., C. Moritz, and B. K. Mable	1996	Molecular systematics	2,114	189,394
Roff, D. M.	1997	Evolutionary quant. genetics	1,108	190,502
Li, W.-H.	1997	Molecular evolution	2,317	192,819
Hartl, D. L., and A. G. Clarke	1997	Principles of pop. genetics	4,538	197,357
Stanley, S. M.	1998	Macro.: pattern and process	1,246	198,603
Lynch, M., and B. Walsh	1998	Analysis of quantitative traits	4,506	203,109
Schluter, D.	2000	Ecology of adaptive radiation	1,974	205,083
Levinton, J. S.	2001	Genet., paleont., macroevol.	246	205,329
Gould, S. J.	2002	Structure of evol. theory	2,340	207,669
West-Eberhard, M. J.	2003	Develop. plasticity and evol.	2,084	209,753
Felsenstein, J.	2004	Inferring phylogenies	2,315	212,068

Note: See the appendix text for details on criteria used.

[a]See Literature Cited in Table A1 for full titles.

[b]As of June 4–5, 2012.

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