

## Supplemental Information

### A survey of sex-biased assumptions in models of sexual selection

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Supplementary Box S1:

#### Some mathematical tools for not assuming female demographic dominance

One extremely common sex-specific assumption is the assumption of female demographic dominance. Female demographic dominance implies that female fecundity is independent of male abundance, while male reproduction is proportional to female abundance (definition from [1]).

Female demographic dominance therefore excludes species with paternal care, or populations where mate or gamete limitation is important. [2]

discusses the importance of explicitly accounting for males from a general population dynamic perspective. There are many ways to model mating and fertilization and thus avoid the assumption of female demographic dominance. Here we discuss two examples of such tools:

fertilization functions and marriage functions.

Fertilization functions are mathematical models that estimate the number of successful fertilizations based on gamete numbers [3]. They were initially inspired by marine broadcast spawners [4], and have since been generalized in various ways [3, 5]. An example of a symmetric fertilization function that is compatible with any gametic system from isogamy to extreme anisogamy (originating in [6]), for gamete numbers  $x$  and  $y$ ,

$$f(x, y) = xy \frac{e^{atx} - e^{aty}}{xe^{atx} - ye^{aty}}$$

where  $a$  is a gamete encounter rate parameter and  $t$  is the fertilization time window (see e.g. [3] for relation to other fertilization functions and for modelling applications).

Marriage functions, also referred to as mating functions, calculate the rate of union formation, where unions refers to mated, reproducing units in the population. As the word suggests, marriage functions were inspired by human couple formation [7, 8] as opposed to broadcast spawners. One class of mating functions commonly used in demography are generalized weighted means, for male and female abundances  $m$  and  $f$ , respectively,

$$M(f, m) = (\beta f^\alpha + (1 - \beta)m^\alpha)^{1/\alpha}$$

where  $\alpha$  and  $\beta$  are constants [9-11].

Both of these functions make it possible to avoid the assumption of female demographic dominance, although only fertilisation functions provide a link to the gametic level.

1. Harts, A.M.F. et al. (2014) Demography can favour female-advantageous alleles. *Proceedings of the Royal Society B: Biological Sciences* 281 (1790).
2. Rankin, D. and Kokko, H. (2007) Do males matter? The role of males in population dynamics. *Oikos* 116 (2), 335-348.
3. Lehtonen, J. and Dardare, L. (2019) Mathematical Models of Fertilization—An Eco-Evolutionary Perspective. *The Quarterly Review of Biology* 94 (2), 177-208.
4. Rothschild, L. and Swann, M.M. (1951) The Fertilization Reaction in the Sea-Urchin The Probability of a Successful Sperm-Egg Collision. *Journal of Experimental Biology* 28 (3), 403-416.
5. Crimaldi, J.P. and Zimmer, R.K. (2014) The Physics of Broadcast Spawning in Benthic Invertebrates. *Annual Review of Marine Science* 6 (1), 141-165.
6. Togashi, T. et al. (2007) Underwater fertilization dynamics of marine green algae. *Mathematical Biosciences* 209, 205-221.
7. Pollak, R.A. (1987) The two-sex problem with persistent unions: a generalization of the birth matrix-mating rule model. *Theoretical Population Biology* 32 (2), 176-187.
8. Pollak, R.A. (1986) A reformulation of the two-sex problem. *Demography* 23 (2), 247-259.
9. Haderl, K. (1989) Pair formation in age-structured populations. In *Evolution and control in biological systems*, pp. 91-102, Springer.
10. Iannelli, M. et al. (2005) *Gender-structured population modeling: mathematical methods, numerics, and simulations*, SIAM.
11. Shyu, E. and Caswell, H. (2018) Mating, births, and transitions: a flexible two-sex matrix model for evolutionary demography. *Population Ecology*.

**Supplementary table S1:** Top 200 search results in google scholar when searching for "sexual selection" on February 28<sup>th</sup>, 2023. Boldface indicates a paper was included in our analysis (papers with a causal model).

#	Authors	Title	Publication & Volume	Number	Pages	Year	Publisher	Theory paper (mathematical)?	Measurement of sexual selection	Causal model of sexual selection
1	Andersson, Malte; Iwasa, Yoh;	Sexual selection	Trends in ecology & evolution 11	2	53-58	1996	Elsevier	No - review		
2	Birkhead, Timothy R; Pizzari, Tommaso;	Postcopulatory sexual selection	Nature reviews genetics 3	4	262-273	2002	Nature Publishing Group UK London	No - review		
3	Andersson, Malte; Simmons, Leigh W;	Sexual selection and mate choice	Trends in ecology & evolution 21	6	296-302	2006	Elsevier	No - review		
4	Hosken, David J; House, Clarissa M;	Sexual selection	Current Biology 21	2	R62-R65	2011	Elsevier	No - review (primer)		
5	Andersson, Malte;	Sexual selection				1994	Princeton University Press	No - book		
6	Klug, Hope; Heuschele, J; Jennions, MD; Kokko, Hanna;	The mismeasurement of sexual selection	Journal of evolutionary biology 23	3	447-462	2010	Wiley Online Library	Yes	Yes	No
<b>7</b>	<b>Kokko, H; Monaghan, P;</b>	<b>Predicting the direction of sexual selection</b>	<b>Ecology letters 4</b>	<b>2</b>	<b>159-165</b>	<b>2001</b>	<b>John Wiley &amp; Sons, Incorporated</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>

8	Lyon, Bruce E; Montgomerie, Robert;	Sexual selection is a form of social selection	Philosophical Transactions of the Royal Society B: Biological Sciences 367	1600	2266-2273	2012	The Royal Society	No - review		
9	Willson, Mary F;	Sexual selection in plants	The American Naturalist 113	6	777-790	1979	University of Chicago Press	No - verbal theory		
10	Arnold, Stevan J; Wade, Michael J;	On the measurement of natural and sexual selection: theory	Evolution		709-719	1984	JSTOR	Yes	Yes	No
11	Clutton-Brock, Tim;	Sexual selection in males and females	Science 318	5858	1882-1885	2007	American Association for the Advancement of Science	No - review		
12	Bennett, Andrew TD; Cuthill, Innes C; Norris, KJ;	Sexual selection and the mismeasure of color	The American Naturalist 144	5	848-860	1994	University of Chicago Press	No - verbal theory		
13	Puts, David;	Human sexual selection	Current opinion in psychology 7		28-32	2016	Elsevier	No - review		
14	<b>Parker, Geoff A;</b>	<b>Sexual selection and sexual conflict</b>	<b>Sexual selection and reproductive competition in insects 123</b>		<b>166</b>	<b>1979</b>		<b>Yes</b>	<b>No</b>	<b>Yes</b>
15	Searcy, William A; Andersson, Malte;	Sexual selection and the evolution of song	Annual Review of Ecology and Systematics 17	1	507-533	1986	Annual Reviews, USA	No - review		
16	<b>Pomiankowski, Andrew;</b>	<b>The costs of choice in sexual selection</b>	<b>Journal of theoretical Biology 128</b>	<b>2</b>	<b>195-218</b>	<b>1987</b>	<b>Elsevier</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
17	Kuijper, Bram; Pen, Ido; Weissing, Franz J;	A guide to sexual selection theory	Annual Review of Ecology, Evolution, and Systematics 43		287-311	2012	Annual Reviews	No - review		

18	Arnold, Stevan J; Wade, Michael J;	On the measurement of natural and sexual selection: applications	Evolution		720-734	1984	JSTOR	Yes	Yes	No
19	Baer, Boris;	Sexual Selection				2020		No - Encyclopedia entry		
20	Clutton-Brock, Tim;	Sexual selection in females	Animal behaviour 77	1	3-11	2009	Elsevier	No - review		
21	Shuker, David M; Kvarnemo, Charlotta;	The definition of sexual selection	Behavioral Ecology 32	5	781-794	2021	Oxford University Press UK	No - review		
<b>22</b>	<b>Grafen, Alan;</b>	<b>Sexual selection unhandicapped by the Fisher process</b>	<b>Journal of theoretical biology 144</b>	<b>4</b>	<b>473-516</b>	<b>1990</b>	<b>Elsevier</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
23	Möller, Anders Pape; Alatalo, Rauno V;	Good-genes effects in sexual selection	Proceedings of the Royal Society of London. Series B: Biological Sciences 266	1414	85-91	1999	The Royal Society	No - review/meta-analysis		
24	West-Eberhard, Mary Jane;	Sexual selection, social competition, and evolution	Proceedings of the American Philosophical Society 123	4	222-234	1979	JSTOR	No - review		
<b>25</b>	<b>Kirkpatrick, Mark;</b>	<b>Sexual selection and the evolution of female choice</b>	<b>Evolution</b>		<b>1-12</b>	<b>1982</b>	<b>JSTOR</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
26	Smith, John Maynard;	Theories of sexual selection	Trends in Ecology & Evolution 6	5	146-151	1991	Elsevier	No - verbal theory and review		
27	Kokko, Hanna; Jennions, Michael D; Brooks, Robert;	Unifying and testing models of sexual selection	Annu. Rev. Ecol. Evol. Syst. 37		43-66	2006	Annual Reviews	No - review		
<b>28</b>	<b>Kokko, Hanna; Brooks, Robert; McNamara, John</b>	<b>The sexual selection continuum</b>	<b>Proceedings of the Royal Society of London. Series B:</b>	<b>1498</b>	<b>1331-1340</b>	<b>2002</b>	<b>The Royal Society</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>

	<b>M; Houston, Alasdair I;</b>		<b>Biological Sciences 269</b>							
29	Panhuis, Tami M; Butlin, Roger; Zuk, Marlene; Tregenza, Tom;	Sexual selection and speciation	Trends in ecology & evolution 16	7	364-371	2001	Elsevier	No - review		
30	Bateman, Angus J;	Intra-sexual selection in Drosophila	Heredity 2	3	349-368	1948	Nature Publishing Group UK London	Yes	Yes	No
31	Campbell, Bernard Grant;	Sexual selection and the descent of man, 1871-1971				1972	Aldine Publishing Company Chicago, IL:	No - book		
32	Jennions, Michael D; Kokko, Hanna;	Sexual selection	Evolutionary behavioral ecology		343-364	2010		No - textbook		
33	Eberhard, William G;	Sexual selection and animal genitalia	Sexual Selection and Animal Genitalia			2013	Harvard University Press	No - book		
<b>34</b>	<b>Agrawal, Aneil F;</b>	<b>Sexual selection and the maintenance of sexual reproduction</b>	<b>Nature 411</b>	<b>6838</b>	<b>692-695</b>	<b>2001</b>	<b>Nature Publishing Group UK London</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
35	Trivers, Robert L;	Parental investment and sexual selection	Sexual selection and the descent of man		136-179	2017	Routledge	No - verbal theory		
<b>36</b>	<b>van Doorn, G Sander; Edelaar, Pim; Weissing, Franz J;</b>	<b>On the origin of species by natural and sexual selection</b>	<b>Science 326</b>	<b>5960</b>	<b>1704-1707</b>	<b>2009</b>	<b>American Association for the Advancement of Science</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
<b>37</b>	<b>Clutton-Brock, Tim H; Parker, Geoffrey A;</b>	<b>Potential reproductive rates and the operation of sexual selection</b>	<b>The Quarterly Review of Biology 67</b>	<b>4</b>	<b>437-456</b>	<b>1992</b>	<b>University of Chicago Press</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>

38	Miller, Christine W; Svensson, Erik I;	Sexual selection in complex environments	Annual Review of Entomology 59		427-445	2014	Annual Reviews	No - review		
39	Puts, David A;	Beauty and the beast: Mechanisms of sexual selection in humans	Evolution and human behavior 31	3	157-175	2010	Elsevier	No - review		
40	Eisner, Thomas; Meinwald, Jerrold;	The chemistry of sexual selection.	Proceedings of the National Academy of Sciences 92	1	50-55	1995	National Acad Sciences	No - review		
<b>41</b>	<b>Hoelzer, Guy A;</b>	<b>The good parent process of sexual selection</b>	<b>Animal Behaviour 38</b>	<b>6</b>	<b>1067-1078</b>	<b>1989</b>	<b>Elsevier</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
42	Emlen, Stephen T; Oring, Lewis W;	Ecology, sexual selection, and the evolution of mating systems	Science 197	4300	215-223	1977	American Association for the Advancement of Science	No - verbal theory		
43	Cox, Cathleen R; Le Boeuf, Burney J;	Female incitation of male competition: a mechanism in sexual selection	The American Naturalist 111	978	317-335	1977	University of Chicago Press	No - empirical research		
44	Ritchie, Michael G;	Sexual selection and speciation	Annu. Rev. Ecol. Evol. Syst. 38		79-102	2007	Annual Reviews	No - review		
45	Mayr, Ernst;	Sexual selection and natural selection	Sexual selection and the descent of man		87-104	2017	Routledge	No - book		
46	Lailvaux, Simon P; Irschick, Duncan J;	A functional perspective on sexual selection: insights and future prospects	Animal Behaviour 72	2	263-273	2006	Elsevier	No - review		
47	Miller, Geoffrey;	Sexual selection for indicators of intelligence	The Nature of Intelligence: Novartis		260-275	2000	Wiley Online Library	No - verbal theory		



			Foundation Symposium 233							
48	Schuett, Wiebke; Tregenza, Tom; Dall, Sasha RX;	Sexual selection and animal personality	Biological Reviews 85	2	217-246	2010	Wiley Online Library	No - review		
49	Arnold, Stevan J;	Bateman's principles and the measurement of sexual selection in plants and animals	The American Naturalist 144		S126-S149	1994	University of Chicago Press	No - verbal theory		
50	Hosken, David J; Stockley, Paula;	Sexual selection and genital evolution	Trends in ecology & evolution 19	2	87-93	2004	Elsevier	No - review		
51	Gibson, Robert M; Höglund, Jacob;	Copying and sexual selection	Trends in Ecology & Evolution 7	7	229-232	1992	Elsevier	No - review		
52	Miller, Geoffrey F;	Sexual selection for cultural displays	The evolution of culture		71-91	1999		No -verbal theory		
<b>53</b>	<b>Andersson, M;</b>	<b>Sexual selection, natural selection and quality advertisement</b>	<b>Biological Journal of the Linnean Society 17</b>	<b>4</b>	<b>375-393</b>	<b>1982</b>	<b>Oxford University Press</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
54	Richards, Evelleen;	Darwin and the making of sexual selection	Darwin and the Making of Sexual Selection			2017	University of Chicago Press	No - book		
55	West-Eberhard, Mary Jane;	Sexual selection, social competition, and speciation	The quarterly review of biology 58	2	155-183	1983	Stony Brook Foundation, Inc.	No - review		
56	Moore, Jamie C; Pannell, John R;	Sexual selection in plants	Current biology 21	5	R176-R182	2011	Elsevier	No - review (primer)		
57	Miller, Geoffrey F;	Sexual selection for moral virtues	The Quarterly review of biology 82	2	97-125	2007	The University of Chicago Press	No - review		
58	Gaulin, Steven JC; Fitzgerald, Randall W;	Sexual selection for spatial-learning ability	Animal behaviour 37		322-331	1989	Elsevier	No - empirical research		

59	Gangestad, Steven W; Thornhill, Randy;	Human sexual selection and developmental stability	Evolutionary social psychology 10		169-196	1997		No - verbal theory and review empirical work		
60	Ryan, Michael J;	Sexual selection, sensory systems and sensory exploitation	Oxford surveys in evolutionary biology 7		157-195	1990		No - review		
61	Willson, Mary F;	Sexual selection in plants: perspective and overview	The American Naturalist 144		S13-S39	1994	University of Chicago Press	No - review		
62	Buss, David M;	Psychological sex differences: Origins through sexual selection.				1995	American Psychological Association	No - review		
63	Price, Trevor; Schluter, Dolph; Heckman, Nancy E;	<b>Sexual selection when the female directly benefits</b>	<b>Biological Journal of the Linnean Society 48</b>	<b>3</b>	<b>187-211</b>	<b>1993</b>	<b>Oxford University Press</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
64	Wade, Michael J;	<b>Sexual selection and variance in reproductive success</b>	<b>The American Naturalist 114</b>	<b>5</b>	<b>742-747</b>	<b>1979</b>	<b>University of Chicago Press</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
65	Møller, Anders P; Thornhill, Randy;	Bilateral symmetry and sexual selection: a meta-analysis	The American Naturalist 151	2	174-192	1998	The University of Chicago Press	No - meta-analysis		
66	Ryan, Michael J; Fox, James H; Wilczynski, Walter; Rand, A Stanley;	Sexual selection for sensory exploitation in the frog <i>Physalaemus pustulosus</i>	Nature 343	6253	66-67	1990	Nature Publishing Group UK London	No - empirical research		
67	Maan, Martine E; Seehausen, Ole;	Ecology, sexual selection and speciation	Ecology letters 14	6	591-602	2011	Wiley Online Library	No - review		

68	Geary, David C;	Sexual selection and sex differences in mathematical abilities	Behavioral and brain sciences 19	2	229-247	1996	Cambridge University Press	No - verbal theory		
69	Jennions, MD; Kokko, Hanna; Klug, H;	The opportunity to be misled in studies of sexual selection	Journal of evolutionary biology 25	3	591-598	2012	Wiley Online Library	Yes	Yes	No
70	Jacobs, Lucia F;	Sexual selection and the brain	Trends in Ecology & Evolution 11	2	82-86	1996	Elsevier	No - review		
71	Winemiller, Kirk O;	Life-history strategies and the effectiveness of sexual selection	Oikos		318-327	1992	JSTOR	No - verbal theory		
<b>72</b>	<b>Lande, Russell;</b>	<b>Sexual dimorphism, sexual selection, and adaptation in polygenic characters</b>	<b>Evolution</b>		<b>292-305</b>	<b>1980</b>	<b>JSTOR</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
73	Glutton-Brock, T Hv; Vincent, Amanda CJ;	Sexual selection and the potential reproductive rates of males and females	Nature 351	6321	58-60	1991	Nature Publishing Group UK London	No - meta-analysis		
74	Møller, A; Jennions, Michael;	How important are direct fitness benefits of sexual selection?	Naturwissenschaften 88		401-415	2001	Springer	No - meta-analysis		
75	Kodric-Brown, Astrid; Brown, James H;	Truth in advertising: the kinds of traits favored by sexual selection	The American Naturalist 124	3	309-323	1984	University of Chicago Press	No - verbal theory		
76	Selander, Robert K;	Sexual selection and dimorphism in birds	Sexual selection and the descent of man		180-230	2017	Routledge	No - verbal theory		

77	Siller, Steven;	Sexual selection and the maintenance of sex	Nature 411	6838	689-692	2001	Nature Publishing Group UK London	Yes	No	Yes
78	Arnold, Stevan J;	Sexual selection: the interface of theory and empiricism STEVAN J. ARNOLD	Mate choice		67	1983	Cambridge University Press	No - review		
79	Simmons, Leigh W;	Sexual selection and genital evolution	Austral Entomology 53	1	1-17	2014	Wiley Online Library	No - review		
80	Møller, Anders Pape;	Protandry, sexual selection and climate change	Global Change Biology 10	12	2028-2035	2004	Wiley Online Library	No - empirical research		
81	Sturtevant, Alfred H;	Experiments on sex recognition and the problem of sexual selection in Drosophila.	Journal of Animal Behavior 5	5	351	1915	Henry Holt and Company, Inc.	No - empirical research		
82	Eberhard, William;	Female control: sexual selection by cryptic female choice				1996	Princeton University Press	No - book		
83	Grammer, Karl; Fink, Bernhard; Møller, Anders P; Thornhill, Randy;	Darwinian aesthetics: sexual selection and the biology of beauty	Biological reviews 78	3	385-407	2003	Cambridge University Press	No - review		
84	Miller, Geoffrey;	Evolution of human music through sexual selection				2000	na	No - verbal theory		
85	Candolin, Ulrika; Heuschele, Jan;	Is sexual selection beneficial during adaptation to environmental change?	Trends in ecology & evolution 23	8	446-452	2008	Elsevier	No - review		

86	Stephenson, Andrew G; Bertin, Robert I;	Male competition, female choice, and sexual selection in plants	Pollination biology 109		149	1983	Academic Press New York	No - review		
87	<b>Barton, Nicholas H; Turelli, Michael;</b>	<b>Natural and sexual selection on many loci.</b>	<b>Genetics 127</b>	<b>1</b>	<b>229-255</b>	<b>1991</b>	<b>Oxford University Press</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
88	Arnqvist, Göran;	Comparative evidence for the evolution of genitalia by sexual selection	Nature 393	6687	784-786	1998	Nature Publishing Group UK London	No - comparative (literature) study		
89	Irschick, Duncan J; Herrel, Anthony; Vanhooydonck, Bieke; Van Damme, Raoul;	A functional approach to sexual selection	Functional Ecology		621-626	2007	JSTOR	No - review		
90	Jones, Adam G;	On the opportunity for sexual selection, the Bateman gradient and the maximum intensity of sexual selection	Evolution 63	7	1673-1684	2009	Blackwell Publishing Inc Malden, USA	Yes	Yes	No
91	Blaustein, Andrew R;	Sexual selection and mammalian olfaction	The American Naturalist 117	6	1006-1010	1981	University of Chicago Press	No - review		
92	Kirkpatrick, Mark; Ravigné, Virginie;	Speciation by natural and sexual selection: models and experiments	the american naturalist 159	S3	S22-S35	2002	The University of Chicago Press	No - review		
93	Geary, David C;	Sexual selection and human life history.				2002	Academic Press	No - verbal theory		

94	Selander, Robert K;	On mating systems and sexual selection	The American Naturalist 99	906	129-141	1965	Science Press	No - verbal theory and comparative analysis		
95	Shine, Richard;	Sexual selection and sexual dimorphism in the Amphibia	Copeia		297-306	1979	JSTOR	No - meta-analysis		
96	Holland, Brett; Rice, William R;	Perspective: chase-away sexual selection: antagonistic seduction versus resistance	Evolution 52	1	1-7	1998	Blackwell Publishing Inc Malden, USA	No - verbal theory		
97	Kruger, Daniel J; Nesse, Randolph M;	Sexual selection and the male: female mortality ratio	Evolutionary psychology 2	1		2004	SAGE Publications Sage CA: Los Angeles, CA	No - empirical research		
98	<b>Charnov, Eric L;</b>	<b>Simultaneous hermaphroditism and sexual selection</b>	<b>Proceedings of the National Academy of Sciences 76</b>	<b>5</b>	<b>2480-2484</b>	<b>1979</b>	<b>National Acad Sciences</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
99	Neff, Bryan D; Pitcher, Trevor E;	Genetic quality and sexual selection: an integrated framework for good genes and compatible genes	Molecular ecology 14	1	19-38	2005	Wiley Online Library	No - verbal theory		
100	West, Peyton M; Packer, Craig;	Sexual selection, temperature, and the lion's mane	Science 297	5585	1339-1343	2002	American Association for the Advancement of Science	No - empirical research		
101	<b>Johnstone, RA; Rands, SA; Evans, MR;</b>	<b>Sexual selection and condition-dependence</b>	<b>Journal of Evolutionary Biology 22</b>	<b>12</b>	<b>2387-2394</b>	<b>2009</b>	<b>Wiley Online Library</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>

102	Endler, John A; Basolo, Alexandra L;	Sensory ecology, receiver biases and sexual selection	Trends in ecology & evolution 13	10	415- 420	1998	Elsevier	No - review		
103	Shuster, Stephen M;	Sexual selection and mating systems	Proceedings of the National Academy of Sciences 106		10009 - 10016	2009	National Acad Sciences	No - review		
<b>104</b>	<b>Kokko, Hanna; Mappes, Johanna;</b>	<b>Sexual selection when fertilization is not guaranteed</b>	<b>Evolution 59</b>	<b>9</b>	<b>1876- 1885</b>	<b>2005</b>	<b>Wiley Online Library</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
105	Clayton, DH;	The influence of parasites on host sexual selection	Parasitology today 7	12	329- 334	1991	Elsevier	No - review		
106	Skogsmyr, IO; Lankinen, ÅSA;	Sexual selection: an evolutionary force in plants?	Biological Reviews 77	4	537- 562	2002	Cambridge University Press	No - review		
107	Shuker, David M;	Sexual selection: endless forms or tangled bank?	Animal Behaviour 79	3	e11- e17	2010	Academic Press	No - verbal theory		
108	Cockburn, Andrew; Osmond, Helen L; Double, Michael C;	Swingin'in the rain: condition dependence and sexual selection in a capricious world	Proceedings of the Royal Society B: Biological Sciences 275	1635	605- 612	2008	The Royal Society London	No - empirical research		
109	Catchpole, Clive K;	Bird song, sexual selection and female choice	Trends in ecology & evolution 2	4	94-97	1987	Elsevier	No - review		
110	Rolá; n-Alvarez, Emilio; Caballero, Armando;	Estimating sexual selection and sexual isolation effects from mating frequencies	Evolution 54	1	30-36	2000	Blackwell Publishing Inc Malden, USA	Yes	Yes	No
111	Mead, Louise S; Arnold, Stevan J;	Quantitative genetic models of sexual selection	Trends in ecology & evolution 19	5	264- 271	2004	Elsevier	No - review		

112	Lozano, George A;	Carotenoids, parasites, and sexual selection	Oikos		309-311	1994	JSTOR	No - verbal theory		
113	Higashi, M; Takimoto, G; Yamamura, and N;	<b>Sympatric speciation by sexual selection</b>	<b>Nature 402</b>	<b>6761</b>	<b>523-526</b>	<b>1999</b>	<b>Nature Publishing Group UK London</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
114	Heywood, John S;	<b>Sexual selection by the handicap mechanism</b>	<b>Evolution 43</b>	<b>7</b>	<b>1387-1397</b>	<b>1989</b>	<b>Blackwell Publishing Inc Malden, USA</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
115	Brooks, Robert; Hunt, John; Blows, Mark W; Smith, Michael J; Bussière, Luc F; Jennions, Michael D;	Experimental evidence for multivariate stabilizing sexual selection	Evolution 59	4	871-880	2005	Wiley Online Library	No - empirical research		
116	Dixson, Alan F;	Sexual selection and the origins of human mating systems				2009	Oxford University Press	No - book		
117	Payne, Robert B;	Sexual selection, lek and arena behavior, and sexual size dimorphism in birds	Ornithological monographs	33	iii-52	1984	JSTOR	No - empirical research		
118	Parker, Geoff A; Pizzari, Tommaso;	Sexual selection: the logical imperative	Current perspectives on sexual selection: what's left after Darwin?		119-163	2015	Springer	No - review		
119	Hare, Robin M; Simmons, Leigh W;	Sexual selection and its evolutionary consequences in female animals	Biological Reviews 94	3	929-956	2019	Wiley Online Library	No - review		



120	Holland, Brett;	Sexual selection fails to promote adaptation to a new environment	Evolution 56	4	721-730	2002	Wiley Online Library	No - empirical research		
121	Møller, Anders Pape; Pomiankowski, and A;	Fluctuating asymmetry and sexual selection	Genetica 89		267-279	1993	Springer	No - review		
122	Moller, AP; Christe, P; Lux, E;	Parasitism, host immune function, and sexual selection	The Quarterly Review of Biology 74	1	3-20	1999	University of Chicago Press	No - meta-analysis		
123	Watson, Paul J; Thornhill, Randy;	Fluctuating asymmetry and sexual selection	Trends in Ecology & Evolution 9	1	21-25	1994	Elsevier	No - review		
124	Verzijden, Machteld N; Ten Cate, Carel; Servedio, Maria R; Kozak, Genevieve M; Boughman, Jenny W; Svensson, Erik I;	The impact of learning on sexual selection and speciation	Trends in ecology & evolution 27	9	511-519	2012	Elsevier	No - review		
125	Promislow, Daniel EL;	Costs of sexual selection in natural populations of mammals	Proceedings of the Royal Society of London. Series B: Biological Sciences 247	1320	203-210	1992	The Royal Society London	No - comparative (literature) study		
126	Wagner, Catherine E; Harmon, Luke J; Seehausen, Ole;	Ecological opportunity and sexual selection together predict adaptive radiation	Nature 487	7407	366-369	2012	Nature Publishing Group UK London	No - phylogenetic analysis		
127	McDonald, Grant C; James,	Sexual networks: measuring sexual	Philosophical Transactions of the	1613	2E+07	2013	The Royal Society	Yes	Yes	No

	Richard; Krause, Jens; Pizzari, Tommaso;	selection in structured, polyandrous populations	Royal Society B: Biological Sciences 368							
128	Byers, John A; Waits, Lisette;	Good genes sexual selection in nature	Proceedings of the National Academy of Sciences 103	44	16343 - 16345	2006	National Acad Sciences	No - empirical research		
129	Snowdon, CHARLES T;	Sexual selection and communication	Sexual selection in primates: New and comparative perspectives		57-70	2004	Cambridge University Press Cambridge, UK	No - review		
130	Evans, JP; Garcia-Gonzalez, Francisco;	The total opportunity for sexual selection and the integration of pre-and post-mating episodes of sexual selection in a complex world	Journal of Evolutionary Biology 29	12	2338-2361	2016	Wiley Online Library	No - review		
131	Bonduriansky, Russell; Maklakov, A; Zajitschek, Felix; Brooks, R;	Sexual selection, sexual conflict and the evolution of ageing and life span	Functional ecology		443-453	2008	JSTOR	No - review and verbal theory		
132	Rowe, Locke; Rundle, Howard D;	The alignment of natural and sexual selection	Annual Review of Ecology, Evolution, and Systematics 52		499-517	2021	Annual Reviews	No - review		
133	Rosvall, Kimberly A;	Intrasexual competition in females: evidence for sexual selection?	Behavioral Ecology 22	6	1131-1140	2011	Oxford University Press	No - review		
134	Gosden, Thomas P; Svensson, Erik I;	Spatial and temporal dynamics	Evolution 62	4	845-856	2008	Blackwell Publishing Inc Malden, USA	No - empirical research		

		in a sexual selection mosaic								
135	Price, Trevor;	Sexual selection and natural selection in bird speciation	Philosophical Transactions of the Royal Society of London. Series B: Biological Sciences 353	1366	251-260	1998	The Royal Society	No - review and verbal theory		
136	Evans, Jonathan P; Zane, Lorenzo; Francescato, Samuela; Pilastro, Andrea;	Directional postcopulatory sexual selection revealed by artificial insemination	Nature 421	6921	360-363	2003	Nature Publishing Group UK London	No - empirical research		
137	Lindenfors, Patrik; Tullberg, Birgitta S; Biuw, Martin;	Phylogenetic analyses of sexual selection and sexual size dimorphism in pinnipeds	Behavioral Ecology and Sociobiology 52		188-193	2002	Springer	No - phylogenetic analysis		
138	Gadgil, Madhav;	Male dimorphism as a consequence of sexual selection	The American Naturalist 106	951	574-580	1972	University of Chicago Press	No - verbal theory		
139	Jones, Adam G; Ratterman, Nicholas L;	Mate choice and sexual selection: what have we learned since Darwin?	Proceedings of the National Academy of Sciences 106		10001 - 10008	2009	National Acad Sciences	No - review		
140	Ryan, Michael J; Rand, A Stanley;	Sexual selection and signal evolution: the ghost of biases past	Philosophical Transactions of the Royal Society of London. Series B: Biological Sciences 340	1292	187-195	1993	The Royal Society London	No - phylogenetic analysis		

141	Turner, George F; Burrows, Michael T;	A model of sympatric speciation by sexual selection	Proceedings of the Royal Society of London. Series B: Biological Sciences 260	1359	287-292	1995	The Royal Society London	No - no mathematics in paper, no simulation code available		
142	Kirkpatrick, Mark; Hall, David W;	<b>Sexual selection and sex linkage</b>	<b>Evolution 58</b>	<b>4</b>	<b>683-691</b>	<b>2004</b>	<b>Blackwell Publishing Ltd Oxford, UK</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
143	Murphy, Christopher G;	Interaction-independent sexual selection and the mechanisms of sexual selection	Evolution 52	1	8-18	1998	Blackwell Publishing Inc Malden, USA	No - verbal theory		
144	Lande, Russell;	<b>Models of speciation by sexual selection on polygenic traits</b>	<b>Proceedings of the National Academy of Sciences 78</b>	<b>6</b>	<b>3721-3725</b>	<b>1981</b>	<b>National Acad Sciences</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
145	Huber, Bernhard A;	Sexual selection research on spiders: progress and biases	Biological Reviews 80	3	363-385	2005	Wiley Online Library	No - review		
146	Lumley, Alyson J; Michalczyk, Łukasz; Kitson, James JN; Spurgin, Lewis G; Morrison, Catriona A; Godwin, Joanne L; Dickinson, Matthew E; Martin, Oliver Y; Emerson, Brent C; Chapman, Tracey;	Sexual selection protects against extinction	Nature 522	7557	470-473	2015	Nature Publishing Group UK London	No - empirical research		

147	Kohn, Marek; Mithen, Steven;	Handaxes: products of sexual selection?	Antiquity 73	281	518-526	1999	Cambridge University Press	No - verbal theory		
148	<b>Kokko, Hanna; Brooks, Robert;</b>	<b>Sexy to die for? Sexual selection and the risk of extinction</b>	<b>Annales Zoologici Fennici</b>		<b>207-219</b>	<b>2003</b>	<b>JSTOR</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
149	Andrade, Maydianne CB;	Sexual selection for male sacrifice in the Australian redback spider	Science 271	5245	70-72	1996	American Association for the Advancement of Science	No - empirical research		
150	Kappeler, Peter M; Van Schaik, Carel P;	Sexual selection in primates: new and comparative perspectives				2004	Cambridge University Press	No - book		
151	<b>Lorch, Patrick D; Proulx, Stephen; Rowe, Locke; Day, Troy;</b>	<b>Condition-dependent sexual selection can accelerate adaptation</b>	<b>Evolutionary ecology research 5</b>	<b>6</b>	<b>867-881</b>	<b>2003</b>	<b>Evolutionary Ecology, Ltd.</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
152	Ingleby, FC; Hunt, J; Hosken, DJ;	The role of genotype-by-environment interactions in sexual selection	Journal of evolutionary biology 23	10	2031-2045	2010	Wiley Online Library	No - review and verbal theory		
153	Stamps, Judy A;	Sexual selection, sexual dimorphism, and territoriality	Lizard ecology		169-204	2013	Harvard University Press	No - empirical book chapter		
154	Cronin, Helena;	The ant and the peacock: Altruism and sexual selection from Darwin to today				1993	Cambridge University Press	No - book		

155	Johnsgard, Paul A;	Arena birds. Sexual selection and behavior	SMITHSONIAN INSTITUTION PRESS, WASHINGTON, DC(USA). 1994.			1994		No - book		
156	Gowaty, Patricia Adair;	Sexual dialectics, sexual selection, and variation in reproductive behavior	Feminism and evolutionary biology: Boundaries, intersections and frontiers		351-384	1997	Springer	No - verbal theory		
157	Kraaijeveld, Ken; Kraaijeveld-Smit, Femmie JL; Maan, Martine E;	Sexual selection and speciation: the comparative evidence revisited	Biological Reviews 86	2	367-377	2011	Wiley Online Library	No - review		
158	Boomsma, Jacobus J;	Kin selection versus sexual selection: why the ends do not meet	Current Biology 17	16	R673-R683	2007	Elsevier	No - review		
159	<b>Smith, John Maynard;</b>	<b>Sexual selection and the handicap principle</b>	<b>Journal of Theoretical Biology 57</b>	<b>1</b>	<b>239-242</b>	<b>1976</b>	<b>Elsevier</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
160	Hill, Alexander K; Hunt, John; Welling, Lisa LM; Cardenas, Rodrigo A; Rotella, Michelle A; Wheatley, John R; Dawood, Khytam; Shriver, Mark D; Puts, David A;	Quantifying the strength and form of sexual selection on men's traits	Evolution and Human Behavior 34	5	334-341	2013	Elsevier	No - empirical research		
161	Evans, Jonathan P; Pilaastro, Andrea;	Postcopulatory sexual selection	Ecology and evolution of poeciliid fishes		197-208	2011	Chicago University Press:	No - review		

							Chicago, IL, USA			
162	Kirkpatrick, Mark;	Sexual selection by female choice in polygynous animals	Annual Review of Ecology and Systematics 18	1	43-70	1987	Annual Reviews, USA	No - review		
163	<b>Parker, George; Simmons, LW;</b>	<b>Parental investment and the control of sexual selection: predicting the direction of sexual competition</b>	<b>Proceedings of the Royal Society of London. Series B: Biological Sciences 263</b>	<b>1368</b>	<b>315-321</b>	<b>1996</b>	<b>The Royal Society London</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
164	Bjork, Adam; Pitnick, Scott;	Intensity of sexual selection along the anisogamy–isogamy continuum	Nature 441	7094	742-745	2006	Nature Publishing Group UK London	No - empirical research		
165	<b>Wade, Michael J; Arnold, Stevan J;</b>	<b>The intensity of sexual selection in relation to male sexual behaviour, female choice, and sperm precedence</b>	<b>Animal Behaviour 28</b>	<b>2</b>	<b>446-461</b>	<b>1980</b>	<b>Elsevier</b>	<b>Yes</b>	<b>Yes</b>	<b>Yes</b>
166	Pitnick, Scott; Miller, Gary T; Reagan, Jennifer; Holland, Brett;	Males' evolutionary responses to experimental removal of sexual selection	Proceedings of the Royal Society of London. Series B: Biological Sciences 268	1471	1071-1080	2001	The Royal Society	No - empirical research		
167	West-Eberhard, Mary Jane;	Sexual selection, competitive communication and species specific signals in insects	Insect communication (Proceedings of the 12th symposium of the Royal Entomological Society of London			1984	Acedemic Press	No - review		

168	West-Eberhard, Mary Jane;	Darwin's forgotten idea: the social essence of sexual selection	Neuroscience & Biobehavioral Reviews 46		501-508	2014	Elsevier	No - review		
169	Carothers, John H;	Sexual selection and sexual dimorphism in some herbivorous lizards	The American Naturalist 124	2	244-254	1984	University of Chicago Press	No - comparative literature study		
170	Moore, Sarah L; Wilson, Kenneth;	Parasites as a viability cost of sexual selection in natural populations of mammals	Science 297	5589	2015-2018	2002	American Association for the Advancement of Science	No - comparative (literature) analysis		
171	Wickman, Per-Olof;	Sexual selection and butterfly design—a comparative study	Evolution 46	5	1525-1536	1992	Blackwell Publishing Inc Malden, USA	No - empirical research		
172	Goh, Kai Song; Lim, Andrew; Rodrigues, Brian;	Sexual selection for genetic algorithms	Artificial Intelligence Review 19		123-152	2003	Springer	No - different research field (optimization algorithms)		
173	Bonduriansky, Russell;	Sexual selection and allometry: a critical reappraisal of the evidence and ideas	Evolution 61	4	838-849	2007	Blackwell Publishing Inc Malden, USA	No - review/interspecific comparison		
<b>174</b>	<b>Kirkpatrick, Mark;</b>	<b>The handicap mechanism of sexual selection does not work</b>	<b>The American Naturalist 127</b>	<b>2</b>	<b>222-240</b>	<b>1986</b>	<b>University of Chicago Press</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
175	Grant, Verne;	Sexual selection in plants: pros and cons.	Proceedings of the National Academy of Sciences 92	5	1247-1250	1995	National Acad Sciences	No - review		
176	Ryan, Michael J;	Sexual selection, receiver biases, and	Science 281	5385	1999-2003	1998	American Association	No - review		



		the evolution of sex differences					for the Advancement of Science			
177	Kokko, Hanna; Jennions, Michael D;	Parental investment, sexual selection and sex ratios	Journal of evolutionary biology 21	4	919-948	2008	Wiley Online Library	Yes	No	Yes
178	Hill, Geoffrey E; Johnson, James D;	The mitonuclear compatibility hypothesis of sexual selection	Proceedings of the Royal Society B: Biological Sciences 280	1768	2E+07	2013	The Royal Society	No - verbal theory		
179	Pellegrini, Anthony D; Long, Jeffrey D;	A sexual selection theory longitudinal analysis of sexual segregation and integration in early adolescence	Journal of Experimental Child Psychology 85	3	257-278	2003	Elsevier	No - empirical research		
180	Moller, Anders Pape;	Frequency of female copulations with multiple males and sexual selection	The American Naturalist 139	5	1089-1101	1992	University of Chicago Press	No - verbal model		
181	Bro-Jørgensen, Jakob;	The intensity of sexual selection predicts weapon size in male bovids	Evolution 61	6	1316-1326	2007	Blackwell Publishing Inc Malden, USA	No - comparative (literature) analysis		
182	Eberhard, William G;	Postcopulatory sexual selection: Darwin's omission and its consequences	Proceedings of the National Academy of Sciences 106		10025 - 10032	2009	National Acad Sciences	No - review and verbal theory		
183	Burley, Nancy;	Sexual selection for aesthetic traits in species with biparental care	The American Naturalist 127	4	415-445	1986	University of Chicago Press	No -verbal theory		

184	Rodríguez-Muñoz, R; Bretman, A; Slate, J; Walling, CA; Tregenza, T;	Natural and sexual selection in a wild insect population	Science 328	5983	1269-1272	2010	American Association for the Advancement of Science	No - empirical research		
185	Moore, Allen J;	The evolution of sexual dimorphism by sexual selection: the separate effects of intrasexual selection and intersexual selection	Evolution 44	2	315-331	1990	Blackwell Publishing Inc Malden, USA	No - empirical research		
186	Ryan, Michael J;	The túngara frog: a study in sexual selection and communication				1985	University of Chicago Press	No - book		
187	Fitzpatrick, John L; Lüpold, Stefan;	Sexual selection and the evolution of sperm quality	Molecular Human Reproduction 20	12	1180-1189	2014	Oxford University Press	No - review		
188	Thornhill, Randy;	Sexual selection and paternal investment in insects	The American Naturalist 110	971	153-163	1976	University of Chicago Press	No - review		
189	Anderson, Roger A; Vitt, Laurie J;	Sexual selection versus alternative causes of sexual dimorphism in teiid lizards	Oecologia 84		145-157	1990	Springer	No - empirical research		
190	Brown, Steven;	Evolutionary models of music: From sexual selection to group selection	Perspectives in ethology: Evolution, culture, and behavior		231-281	2000	Springer	No -verbal theory		
191	Huxley, Julian S;	Darwin's theory of sexual selection	The American Naturalist 72	742	416-433	1938	Science Press	No - verbal theory		

		and the data subsumed by it, in the light of recent research								
192	Tobias, Joseph A; Montgomerie, Robert; Lyon, Bruce E;	The evolution of female ornaments and weaponry: social selection, sexual selection and ecological competition	Philosophical Transactions of the Royal Society B: Biological Sciences 367	1600	2274-2293	2012	The Royal Society	No - review		
193	Irestedt, Martin; Jønsson, Knud A; Fjeldså, Jon; Christidis, Les; Ericson, Per GP;	An unexpectedly long history of sexual selection in birds-of-paradise	BMC evolutionary biology 9	1		2009	BioMed Central	No - empirical research		
194	Calhim, Sara; Immler, Simone; Birkhead, Tim R;	Postcopulatory sexual selection is associated with reduced variation in sperm morphology	PLoS one 2	5	e413	2007	Public Library of Science San Francisco, USA	No - empirical research		
195	Ah-King, Malin;	The history of sexual selection research provides insights as to why females are still understudied	Nature Communications 13	1	6976	2022	Nature Publishing Group UK London	No - perspective/history		
196	Grammer, Karl; Thornhill, Randy;	Human (Homo sapiens) facial attractiveness and sexual selection: the role of symmetry and averageness.	Journal of comparative psychology 108	3	233	1994	American Psychological Association	No - empirical research		

197	Puts, David A; Jones, Benedict C; DeBruine, Lisa M;	Sexual selection on human faces and voices	Journal of sex research 49		227-243	2012	Taylor & Francis	No - review		
198	Lindenfors, Patrik; Tullberg, Birgitta S;	Evolutionary aspects of aggression: the importance of sexual selection	Advances in genetics 75			2011	Elsevier	No - review		
199	Trivers, Robert L;	Sexual selection and resource-accruing abilities in <i>Anolis garmani</i>	Evolution		253-269	1976	JSTOR	No - empirical research		
200	Uy, J Albert C; Borgia, Gerald;	Sexual selection drives rapid divergence in bowerbird display traits	Evolution 54	1	273-278	2000	Wiley Online Library	No - empirical research		

**Supplementary table S2:** Subset of the top 200 search results in google scholar when searching for "sexual selection" on February 28<sup>th</sup>, 2023

that are theory papers with a causal mathematical model of sexual selection.

#	Authors	Title	Year	Symmetric?	Defines the sexes?
7	Kokko, H; Monaghan, P;	Predicting the direction of sexual selection	2001	Symmetric model, asymmetric parameters	No
14	Parker, Geoff A;	Sexual selection and sexual conflict	1979	Multiple models, some with with asymmetric equations, some with symmetric equations, asymmetric parameters	Yes
16	Pomiankowski, Andrew;	The costs of choice in sexual selection	1987	Asymmetric model	No
22	Grafen, Alan;	Sexual selection unhandicapped by the Fisher process	1990	Asymmetric model	No
25	Kirkpatrick, Mark;	Sexual selection and the evolution of female choice	1982	Asymmetric model	No
28	Kokko, Hanna; Brooks, Robert; McNamara, John M; Houston, Alasdair I;	The sexual selection continuum	2002	Asymmetric model	No
34	Agrawal, Aneil F;	Sexual selection and the maintenance of sexual reproduction	2001	Symmetric model, asymmetric parameters	No
36	van Doorn, G Sander; Edelaar, Pim; Weissing, Franz J;	On the origin of species by natural and sexual selection	2009	Asymmetric model	No
37	Clutton-Brock, Tim H; Parker, Geoffrey A;	Potential reproductive rates and the operation of sexual selection	1992	Symmetric model, asymmetric parameters	No
41	Hoelzer, Guy A;	The good parent process of sexual selection	1989	Asymmetric model	No
53	Andersson, M;	Sexual selection, natural selection and quality advertisement	1982	Asymmetric model	No

63	Price, Trevor; Schluter, Dolph; Heckman, Nancy E;	Sexual selection when the female directly benefits	1993	Asymmetric model	No
64	Wade, Michael J;	Sexual selection and variance in reproductive success	1979	Asymmetric model	No
72	Lande, Russell;	Sexual dimorphism, sexual selection, and adaptation in polygenic characters	1980	Symmetric model, both asymmetric and symmetric parametrizations	No
77	Siller, Steven;	Sexual selection and the maintenance of sex	2001	Asymmetric model	No
87	Barton, Nicholas H; Turelli, Michael;	Natural and sexual selection on many loci.	1991	Mostly asymmetric but contains a symmetric model of assortative mating	No
98	Charnov, Eric L;	Simultaneous hermaphroditism and sexual selection	1979	Asymmetric model	No
101	Johnstone, RA; Rands, SA; Evans, MR;	Sexual selection and condition-dependence	2009	Asymmetric model	No
104	Kokko, Hanna; Mappes, Johanna;	Sexual selection when fertilization is not guaranteed	2005	Asymmetric model	No
113	Higashi, M; Takimoto, G; Yamamura, and N;	Sympatric speciation by sexual selection	1999	Asymmetric model	Yes
114	Heywood, John S;	Sexual selection by the handicap mechanism	1989	Asymmetric model	No
142	Kirkpatrick, Mark; Hall, David W;	Sexual selection and sex linkage	2004	Asymmetric model	No
144	Lande, Russell;	Models of speciation by sexual selection on polygenic traits	1981	Asymmetric model	No
148	Kokko, Hanna; Brooks, Robert;	Sexy to die for? Sexual selection and the risk of extinction	2003	Asymmetric model	No
151	Lorch, Patrick D; Proulx, Stephen; Rowe, Locke; Day, Troy;	Condition-dependent sexual selection can accelerate adaptation	2003	Asymmetric model	No
159	Smith, John Maynard;	Sexual selection and the handicap principle	1976	Asymmetric model	No

163	Parker, George; Simmons, LW;	Parental investment and the control of sexual selection: predicting the direction of sexual competition	1996	Asymmetric model	No
165	Wade, Michael J; Arnold, Stevan J;	The intensity of sexual selection in relation to male sexual behaviour, female choice, and sperm precedence	1980	Asymmetric model	No
174	Kirkpatrick, Mark;	The handicap mechanism of sexual selection does not work	1986	Asymmetric model	No
177	Kokko, Hanna; Jennions, Michael D;	Parental investment, sexual selection and sex ratios	2008	Symmetric model, asymmetric parameters	Yes

**Supplementary table S3:** Top 200 search results in google scholar when searching for mathemat\* OR model\* "sexual selection" from 2013 until 2023, on January 17<sup>th</sup>, 2023. Boldface indicates a paper was included in our analysis (papers with a causal model).

#	Authors	Title	Publication & Volume	Number	Pages	Year	Publisher	Theory paper (math)	Measurement of sexual selection	Causal model of sexual selection
1	Mayr, Ernst;	Sexual selection and natural selection	Sexual selection and the descent of man		87-104	2017	Routledge	No - book chapter (reprint)	No	No
2	Selander, Robert K;	Sexual selection and dimorphism in birds	Sexual selection and the descent of man		180-230	2017	Routledge	No - book chapter (reprint)	No	No
3	Richards, Evelleen;	Darwin and the making of sexual selection	Darwin and the Making of Sexual Selection			2017	University of Chicago Press	No - book	No	No
4	Hill, Geoffrey E; Johnson, James D;	The mitonuclear compatibility hypothesis of sexual selection	Proceedings of the Royal Society B: Biological Sciences: 280	1768	20131 314	2013	The Royal Society	No - verbal	No	No
5	Tonnabel, Jeanne; David, Patrice; Janicke, Tim; Lehner, Arnaud; Mollet, Jean-Claude; Pannell, John R; Dufay, Mathilde;	The scope for postmating sexual selection in plants	Trends in Ecology & Evolution: 36	6	556-567	2021	Elsevier	No - review	No	No



6	Pélissié, Benjamin; Jarne, Philippe; Sarda, Violette; David, Patrice;	Disentangling precopulatory and postcopulatory sexual selection in polyandrous species	Evolution: 68	5	1320- 1331	2014	Wiley Online Library	No - empirical research	No	No
7	Wilkinson, Gerald S; Breden, Felix; Mank, Judith E; Ritchie, Michael G; Higginson, Andrew D; Radwan, Jacek; Jaquier, Julie; Salzburger, Walter; Arriero, Elena; Barribeau, SM;	The locus of sexual selection: moving sexual selection studies into the post-genomics era	Journal of evolutionary biology: 28	4	739- 755	2015	Wiley Online Library	No - review	No	No
<b>8</b>	<b>McDonald, Grant C; Pizzari, Tommaso;</b>	<b>Structure of sexual networks determines the operation of sexual selection</b>	<b>Proceedings of the National Academy of Sciences: 115</b>	<b>1</b>	<b>E53- E61</b>	<b>2018</b>	<b>National Acad Sciences</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
<b>9</b>	<b>Kokko, Hanna; Jennions, Michael D;</b>	<b>The relationship between sexual selection and sexual conflict</b>	<b>Cold Spring Harbor Perspectives in Biology: 6</b>	<b>9</b>	<b>a0175 17</b>	<b>2014</b>	<b>Cold Spring Harbor Lab</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
10	Hunt, John; Hosken, David J;	Genotype-by- environment interactions and sexual selection				2014	John Wiley & Sons	No - book	No	No
11	Lüpold, Stefan; Pitnick, Scott;	Sperm form and function: what do we know about the role of sexual selection?	Reproduction: 155	5	R229- R243	2018	Bioscientif ica Ltd	No- review	No	No
12	Shuker, David M; Simmons, LW;	Sexual selection theory	The evolution of insect mating systems. Oxford		20-41	2014		No - book chapter / review	No	No

			Univ. Press, Oxford, UK							
13	Macedo, Regina; Machado, Glauco;	Sexual selection: perspectives and models from the Neotropics				2013	Academic Press	No, book	No	No
14	Eberhard, William G; Rodríguez, Rafael Lucas; Huber, Bernhard A; Speck, Bretta; Miller, Henry; Buzatto, Bruno A; Machado, Glauco;	Sexual selection and static allometry: the importance of function	The Quarterly Review of Biology: 93	3	207- 250	2018	University of Chicago Press Chicago, IL	No, review	No	No
15	<b>Servedio, Maria R; Bürger, Reinhard;</b>	<b>The counterintuitive role of sexual selection in species maintenance and speciation</b>	<b>Proceedings of the National Academy of Sciences: 111</b>	<b>22</b>	<b>8113- 8118</b>	<b>2014</b>	<b>National Acad Sciences</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
16	<b>Parker, Geoff A;</b>	<b>The sexual cascade and the rise of pre- ejaculatory (Darwinian) sexual selection, sex roles, and sexual conflict</b>	<b>Cold Spring Harbor perspectives in biology: 6</b>	<b>10</b>	<b>a0175 09</b>	<b>2014</b>	<b>Cold Spring Harbor Lab</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
17	Janicke, Tim; Morrow, Edward H;	Operational sex ratio predicts the opportunity and direction of sexual selection across animals	Ecology letters: 21	3	384- 391	2018	Wiley Online Library	No, meta- analysis	No	No

18	<b>Martinossi-Allibert, Ivain; Rueffler, Claus; Arnqvist, Göran; Berger, David;</b>	<b>The efficacy of good genes sexual selection under environmental change</b>	<b>Proceedings of the Royal Society B: 286</b>	<b>1896</b>	<b>20182 313</b>	<b>2019</b>	<b>The Royal Society</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
19	Andersson, Malte;	Sexual selection	Sexual Selection			2019	Princeton University Press	No - book (reprint)	No	No
20	Shuster, Stephen M; Wade, Michael J;	Mating systems and strategies	Mating systems and strategies			2019	Princeton University Press	No - book (reprint)	No	No
21	Simmons, Leigh W;	Sperm competition and its evolutionary consequences in the insects	Sperm Competition and Its Evolutionary Consequences in the Insects			2019	Princeton University Press	No - book (reprint)	No	No
22	Höglund, Jacob; Alatalo, Rauno V;	Leks	Leks			2014	Princeton University Press	No - book (reprint)	No	No
23	Searcy, William A; Yasukawa, Ken;	Polygyny and sexual selection in red-winged blackbirds				2014	Princeton University Press	No - book (reprint)	No	No
24	Dale, James; Dey, Cody J; Delhey, Kaspar; Kempenaers, Bart; Valcu, Mihai;	The effects of life history and sexual selection on male and female plumage colouration	Nature: 527	7578	367-370	2015	Nature Publishing Group	No - empirical research	No	No
25	<b>Martínez-Ruiz, Carlos; Knell, Robert J;</b>	<b>Sexual selection can both increase and decrease extinction probability: reconciling demographic and</b>	<b>Journal of animal ecology: 86</b>	<b>1</b>	<b>117-127</b>	<b>2017</b>	<b>Wiley Online Library</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>

		<b>evolutionary factors</b>								
26	<b>Henshaw, Jonathan M; Kahn, Andrew T; Fritzsche, Karoline;</b>	<b>A rigorous comparison of sexual selection indexes via simulations of diverse mating systems</b>	<b>Proceedings of the National Academy of Sciences: 113</b>	<b>3</b>	<b>E300-E308</b>	<b>2016</b>	<b>National Acad Sciences</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
27	Lindsay, Willow R; Andersson, Staffan; Bererhi, Badreddine; Höglund, Jacob; Johnsen, Arild; Kvarnemo, Charlotta; Leder, Erica H; Lifjeld, Jan T; Ninnis, Calum E; Olsson, Mats;	Endless forms of sexual selection	PeerJ: 7		e7988	2019	PeerJ Inc.	No - review	No	No
28	Alonzo, Suzanne H; Servedio, Maria R;	Grey zones of sexual selection: why is finding a modern definition so hard?	Proceedings of the Royal Society B: 286	1909	20191325	2019	The Royal Society	No - review	No	No
29	Svensson, Erik I;	Eco-evolutionary dynamics of sexual selection and sexual conflict	Functional Ecology: 33	1	60-72	2019	Wiley Online Library	No-review	No	No
30	Zuk, Marlene; Simmons, Leigh W;	Sexual selection: a very short introduction				2018	Oxford University Press	No - book	No	No
31	<b>Mendelson, Tamra C; Martin, Michael D; Flaxman, Samuel M;</b>	<b>Mutation-order divergence by sexual selection: Diversification of sexual signals in similar</b>	<b>Ecology letters: 17</b>	<b>9</b>	<b>1053-1066</b>	<b>2014</b>	<b>Wiley Online Library</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>

		<b>environments as a first step in speciation</b>								
32	Wacker, Sebastian; Mobley, Kenyon; Forsgren, Elisabet; Myhre, Lise Cats; de Jong, Karen; Amundsen, Trond;	Operational sex ratio but not density affects sexual selection in a fish	Evolution: 67	7	1937-1949	2013	Wiley Online Library	No - experimental research	No	No
33	Kekäläinen, Jukka; Evans, Jonathan P;	Gamete-mediated mate choice: towards a more inclusive view of sexual selection	Proceedings of the Royal Society B: Biological Sciences: 285	1883	20180836	2018	The Royal Society	No - review	No	No
34	Evans, Jonathan P; Lymbery, Rowan A;	Sexual selection after gamete release in broadcast spawning invertebrates	Philosophical Transactions of the Royal Society B: 375	1813	2020069	2020	The Royal Society	No - review	No	No
35	Fox, Rebecca J; Fromhage, Lutz; Jennions, Michael D;	Sexual selection, phenotypic plasticity and female reproductive output	Philosophical Transactions of the Royal Society B: 374	1768	20180184	2019	The Royal Society	No - review	No	No
36	Rosenthal, Gil G; Ryan, Michael J;	Sexual selection and the ascent of women: Mate choice research since Darwin	Science: 375	6578	eabi6308	2022	American Association for the Advancement of Science	No - review summary	No	No
37	Baer, Boris;	Sexual selection in social insects	Encyclopedia of Social Insects		803-807	2021	Springer	No - encyclopedia chapter	No	No

38	Baeckens, Simon; Martín, José; García-Roa, Roberto; Van Damme, Raoul;	Sexual selection and the chemical signal design of lacertid lizards	Zoological Journal of the Linnean Society: 183	2	445-457	2018	Oxford University Press UK	No - empirical research	No	No
<b>39</b>	<b>Henshaw, Jonathan M; Jones, Adam G;</b>	<b>Fisher's lost model of runaway sexual selection</b>	<b>Evolution: 74</b>	<b>2</b>	<b>487-494</b>	<b>2020</b>	<b>Wiley Online Library</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
40	Robinson, Cristina M; Snyder, Kate T; Creanza, Nicole;	Correlated evolution between repertoire size and song plasticity predicts that sexual selection on song promotes open-ended learning	Elife: 8		e44454	2019	eLife Sciences Publications Limited	No - empirical research	No	No
41	Katayama, Natsu; Abbott, Jessica K; Kjærandsen, Jostein; Takahashi, Yuma; Svensson, Erik I;	Sexual selection on wing interference patterns in <i>Drosophila melanogaster</i>	Proceedings of the National Academy of Sciences: 111	42	15144-15148	2014	National Acad Sciences	No - empirical research	No	No
42	Beekman, Madeleine; Nieuwenhuis, Bart; Ortiz-Barrientos, Daniel; Evans, Jonathan P;	Sexual selection in hermaphrodites, sperm and broadcast spawners, plants and fungi	Philosophical Transactions of the Royal Society B: Biological Sciences: 371	1706	20150541	2016	The Royal Society	No - review	No	No
43	Ehrman, Lee;	Genetics and sexual selection	Sexual selection and the descent of man		105-135	2017	Routledge	No - book chapter (reprint)	No	No
44	Martin, AM; Festa-Bianchet, M; Coltman, DW; Pelletier, F;	Demographic drivers of age-dependent sexual selection	Journal of Evolutionary Biology: 29	7	1437-1446	2016	Wiley Online Library	No - empirical research	No	No

45	Romano, Andrea; Costanzo, Alessandra; Rubolini, Diego; Saino, Nicola; Møller, Anders Pape;	Geographical and seasonal variation in the intensity of sexual selection in the barn swallow <i>Hirundo rustica</i> : a meta-analysis	Biological Reviews: 92	3	1582-1600	2017	Wiley Online Library	No - meta-analysis	No	No
46	Roulin, Alexandre;	Condition-dependence, pleiotropy and the handicap principle of sexual selection in melanin-based colouration	Biological Reviews: 91	2	328-348	2016	Wiley Online Library	No - review	No	No
47	<b>Chandler, Christopher H; Ofria, Charles; Dworkin, Ian;</b>	<b>Runaway sexual selection leads to good genes</b>	<b>Evolution: International Journal of Organic Evolution: 67</b>	<b>1</b>	<b>110-119</b>	<b>2013</b>	<b>Wiley Online Library</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
48	Marie-Orleach, Lucas; Janicke, Tim; Vizoso, Dita B; David, Patrice; Schärer, Lukas;	Quantifying episodes of sexual selection: insights from a transparent worm with fluorescent sperm	Evolution: 70	2	314-328	2016	Wiley Online Library	No - empirical research	No	No
49	Huang, Huateng; Rabosky, Daniel L;	Sexual selection and diversification: reexamining the correlation between dichromatism and speciation rate in birds	The American Naturalist: 184	5	E101-E114	2014	University of Chicago Press Chicago, IL	No - empirical research	No	No
50	Jennions, Michael D; Fromhage, Lutz;	Not all sex ratios are equal: the Fisher condition, parental care and sexual selection	Philosophical Transactions of the Royal Society B: Biological Sciences: 372	1729	20160312	2017	The Royal Society	No - review	No	No

51	Tidiere, Morgane; Gaillard, Jean-Michel; Müller, Dennis WH; Lackey, Laurie Bingaman; Gimenez, Olivier; Clauss, Marcus; Lemaître, Jean-François;	Does sexual selection shape sex differences in longevity and senescence patterns across vertebrates? A review and new insights from captive ruminants	Evolution: 69	12	3123-3140	2015	Wiley Online Library	No - review	No	No
52	<b>Mullon, Charles; Wright, Alison E; Reuter, Max; Pomiankowski, Andrew; Mank, Judith E;</b>	<b>Evolution of dosage compensation under sexual selection differs between X and Z chromosomes</b>	<b>Nature Communications : 6</b>	<b>1</b>	<b>1-10</b>	<b>2015</b>	<b>Nature Publishing Group</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
53	Dines, James P; Otárola-Castillo, Erik; Ralph, Peter; Alas, Jesse; Daley, Timothy; Smith, Andrew D; Dean, Matthew D;	Sexual selection targets cetacean pelvic bones	Evolution: 68	11	3296-3306	2014	Wiley Online Library	No - empirical research	No	No
54	Moura, Rafael Rios; Peixoto, Paulo Enrique Cardoso;	The effect of operational sex ratio on the opportunity for sexual selection: a meta-analysis	Animal Behaviour: 86	4	675-683	2013	Elsevier	No - meta-analysis	No	No
55	Pérez I de Lanuza, G; Font, E; Monterde, JL;	Using visual modelling to study the evolution of lizard coloration: sexual selection drives the evolution of sexual	Journal of Evolutionary Biology: 26	8	1826-1835	2013	Wiley Online Library	No - empirical research	No	No



		dichromatism in lacertids								
56	Veller, Carl; Muralidhar, Pavitra; Haig, David;	<b>On the logic of Fisherian sexual selection</b>	<b>Evolution: 74</b>	7	1234-1245	2020	Wiley Online Library	Yes	No	Yes
57	Klug, Hope; Langley, Chelsea; Reyes, Elijah;	<b>Cascading effects of pre-adult survival on sexual selection</b>	<b>Royal Society Open Science: 9</b>	4	211973	2022	The Royal Society	Yes	No	Yes
58	McQueen, Alexandra; Kempenaers, Bart; Dale, James; Valcu, Mihai; Emery, Zachary T; Dey, Cody J; Peters, Anne; Delhey, Kaspar;	Evolutionary drivers of seasonal plumage colours: colour change by moult correlates with sexual selection, predation risk and seasonality across passerines	Ecology Letters: 22	11	1838-1849	2019	Wiley Online Library	No - empirical research	No	No
59	Aavani, Pooya; Rice, Sean H;	<b>When sexual selection in hosts benefits parasites</b>	<b>Infectious Disease Modelling: 7</b>	3	561-570	2022	Elsevier	Yes	No	Yes
60	Levitan, Don R;	<b>Do sperm really compete and do eggs ever have a choice? Adult distribution and gamete mixing influence sexual selection, sexual conflict, and the evolution of gamete recognition proteins in the sea</b>	<b>The American Naturalist: 191</b>	1	88-105	2018	University of Chicago Press Chicago, IL	Yes	No	Yes
61	Møller, Anders Pape;	Mate choice, mating systems,	The Behavior of Animals, 2nd Edition:		315-341	2021	Wiley Online Library	No - book chapter	No	No

		and sexual selection	Mechanisms, Function and Evolution							
62	<b>Muniz, Danilo G; Machado, Glauco;</b>	<b>Mate sampling influences the intensity of sexual selection and the evolution of costly sexual ornaments</b>	<b>Journal of theoretical biology: 447</b>		74-83	2018	Elsevier	Yes	No	Yes
63	<b>Tazzyman, Samuel J; Iwasa, Yoh; Pomiankowski, Andrew;</b>	<b>Signaling efficacy drives the evolution of larger sexual ornaments by sexual selection</b>	<b>Evolution: 68</b>	1	216-229	2014	Wiley Online Library	Yes	No	Yes
64	Requena, Gustavo S; Munguía-Steyer, Roberto; Machado, Glauco;	Paternal care and sexual selection in arthropods	Sexual Selection - Perspectives and Models from the Neotropics		201-233	2014	Elsevier	No - book chapter	No	No
65	<b>García-Roa, Roberto; Serra, Manuel; Carazo, Pau;</b>	<b>Ageing via perception costs of reproduction magnifies sexual selection</b>	<b>Proceedings of the Royal society B: 285</b>	1892	20182 136	2018	The Royal Society	Yes	No	Yes
66	<b>Klug, Hope; Langley, Chelsea; Reyes, Elijah;</b>	<b>Resource acquisition and pre-copulatory sexual selection</b>	<b>Ecology and Evolution: 12</b>	7	e9137	2022	Wiley Online Library	Yes	No	Yes
67	Greenfield, Michael D; Alem, Sylvain; Limousin, Denis; Bailey, Nathan W;	The dilemma of Fisherian sexual selection: mate choice for indirect benefits despite rarity and overall weakness of trait-preference genetic correlation	Evolution: 68	12	3524-3536	2014	Wiley Online Library	No - meta-analysis	No	No

68	Bohm, Clifford; Ackles, Acacia L; Ofria, Charles; Hintze, Arend;	On sexual selection in the presence of multiple costly displays	ALIFE 2019: The 2019 Conference on Artificial Life		247- 254	2019	MIT Press	No - conferenc e proceedin gs	No	No
69	Martinossi-Allibert, Ivain; Rueffler, Claus; Arnqvist, Göran; Berger, David;	The efficacy of sexual selection under environmental change	Biorxiv		28345 7	2018	Cold Spring Harbor Laborator y	No - preprint	No	No
70	Feldman, Marcus W;	Mathematical evolutionary theory	Mathematical Evolutionary Theory			2014	Princeton University Press	No - book	No	No
71	Aronsen, Tonje; Berglund, Anders; Mobley, Kenyon B; Ratikainen, Irja I; Rosenqvist, Gunilla;	Sex ratio and density affect sexual selection in a sex-role reversed fish	Evolution: 67	11	3243- 3257	2013	Wiley Online Library	No- empirical research	No	No
72	Fitzpatrick, Courtney L;	Expanding sexual selection gradients; a synthetic refinement of sexual selection theory	Ethology: 121	3	207- 217	2015	Wiley Online Library	Yes	Yes	No
73	McKeown, Gary J;	The analogical peacock hypothesis: The sexual selection of mind-reading and relational cognition in human communication	Review of General Psychology: 17	3	267- 287	2013	SAGE Publicatio ns Sage CA: Los Angeles, CA	No - review	No	No
74	<b>Fitzpatrick, Courtney L; Servedio, Maria R;</b>	<b>Male mate choice, male quality, and the potential for sexual selection</b>	<b>Evolution 71</b>	<b>1</b>	<b>174- 183</b>	<b>2017</b>	<b>Wiley Online Library</b>	<b>No - review</b>	<b>No</b>	<b>Yes</b>

		<b>on female traits under polygyny</b>								
75	Prates, Marcelo de Oliveira Rosa;	Computational models for the study of sexual selection dynamics				2015		No - thesis	No	No
76	<b>Servedio, Maria R; Bürger, Reinhard;</b>	<b>The effects of sexual selection on trait divergence in a peripheral population with gene flow</b>	<b>Evolution 69</b>	<b>10</b>	<b>2648-2661</b>	<b>2015</b>	<b>Wiley Online Library</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
77	<b>Faria, Gonçalo S; Gardner, Andy; Carazo, Pau;</b>	<b>Kin discrimination and demography modulate patterns of sexual conflict</b>	<b>Nature ecology &amp; evolution 4</b>	<b>8</b>	<b>1141-1148</b>	<b>2020</b>	<b>Nature Publishing Group</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
78	<b>Faria, Gonçalo S; Varela, Susana AM; Gardner, Andy;</b>	<b>Sexual selection modulates genetic conflicts and patterns of genomic imprinting</b>	<b>Evolution 71</b>	<b>3</b>	<b>526-540</b>	<b>2017</b>	<b>Wiley Online Library</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
79	Hoquet, Thierry; Levandowsky, Michael;	Utility vs beauty: Darwin, Wallace and the subsequent history of the debate on sexual selection	Current perspectives on sexual selection		19-44	2015	Springer	No - book chapter	No	No
80	Krishnan, Adarsh;	Models of Sexual Selection with Explicit Genetics				2019		No - thesis	No	No
81	<b>Gahtan, Ethan; Mark, Quentin J;</b>	<b>Did sexual selection and culture interact in the evolution of human height?</b>	<b>Journal of Social, Evolutionary, and Cultural Psychology 7</b>	<b>2</b>	<b>121</b>	<b>2013</b>	<b>NorthEastern Evolutionary Psychology</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>

							<b>gy Society</b>			
<b>82</b>	<b>Petrie, Marion;</b>	<b>Evolution by sexual selection</b>	<b>Frontiers in Ecology and Evolution</b>		<b>950</b>	<b>2021</b>	<b>Frontiers</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
83	Jaffe, Andrew; Jackson, Fatimah; Yale, Elizabeth; Rome, Adam; Rohn, Jennifer; Radford, Tim; Haslam, Alex;	Summer reads: Darwin's dilemma on sexual selection, ecology versus empire, and the dark side of the greater good	Nature 559	7714	328- 328	2018	Nature Publishin g Group	No - book reviews	No	No
84	Shuker, David M; Kvarnemo, Charlotta;	The definition of sexual selection: a response to comments on Shuker and Kvarnemo	Behavioral Ecology 32	5	801- 802	2021	Oxford University Press UK	No - verbal	No	No
85	Breed, WG; Ding, X; Tuke, J; Leigh, CM;	Morphological diversity of the spermatozoon and male reproductive tract in Australian Hopping mice, genus Notomys—is it determined by sexual selection?	Journal of Zoology 311	3	194- 203	2020	Wiley Online Library	No - empirical research	No	No
86	Kaul, Veenu; Raina, Madhu;	Sexual Selection in Angiosperms: Paradox Re-visited	Reproductive Ecology of Flowering Plants: Patterns and Processes		245- 274	2020	Springer	No - book chapter with no mathemat ical model	No	No
87	Yu, Thomas; Clark, Andrew G;	Inference of sexual selection from pairwise contests	bioRxiv			2020	Cold Spring Harbor Laborator y	No - preprint	No	No

88	Dutta, Rochishnu; Chechi, Tejinder Singh; Prasad, NG;	Sexual selection affects the evolution of contact pheromones in <i>Drosophila melanogaster</i> populations isolated by differential sexual conflict				2019		No - preprint	No	No
89	Fritzsche, Karoline; Henshaw, Jonathan M; Johnson, Bernadette D; Jones, Adam G;	The 150th anniversary of The Descent of Man: Darwin and the impact of sex-role reversal on sexual selection research	Biological Journal of the Linnean Society 134	3	525-540	2021	Oxford University Press UK	No - review	No	No
90	Koliefotis, Vaios;	Sexual selection of conspicuous consumption	Journal of Evolutionary Economics 32	2	531-552	2022	Springer	No - verbal	No	No
91	Kennair, Leif Edward Ottesen;	Apostolou, Menelaos. 2017. Sexual Selection in Homo Sapiens: Parental Control over Mating and the Opportunity Cost of Free Mate Choice.	Evolutionary Studies in Imaginative Culture 2	1	95-98	2018	Academic Studies Press	No - book review	No	No
92	Klug, Hope; Stone, Libby;	<b>More than just noise: Chance, mating success, and sexual selection</b>	<b>Ecology and Evolution 11</b>	11	6326-6340	2021	Wiley Online Library	Yes	No	Yes
93	Sharda, Sakshi; Kawecki, Tadeusz J; Hollis, Brian;	Adaptation to a bacterial pathogen in <i>Drosophila melanogaster</i> is not aided by sexual selection	Ecology and evolution 12	2	e8543	2022	Wiley Online Library	No - empirical research	No	No

94	<b>Watts, J Colton; Hebets, Eileen A; Tenhumberg, Brigitte;</b>	<b>Mate Sampling Behavior Determines the Density Dependence of Sexual Selection</b>	<b>The American Naturalist 200</b>	<b>4</b>	<b>467-485</b>	<b>2022</b>	<b>The University of Chicago Press Chicago, IL</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
95	Worden, Robert;	The evolution of language by sexual selection	Frontiers in Psychology		7938	2022	Frontiers	No - verbal theory	No	No
96	Aavani, Pooya;	A new theoretical treatment of pathogen and host evolution				2019		No - thesis	No	No
97	Nieberding, Caroline M; San Martin, Gilles; Saenko, Suzanne; Allen, Cerisse E; Brakefield, Paul M; Visser, Bertanne;	Sexual selection contributes to partial restoration of phenotypic robustness in a butterfly	Scientific Reports 8	1	1-13	2018	Nature Publishing Group	No - empirical research	No	No
98	Kappeler, Peter M;	Sexual Selection: Evolutionary Foundations	Animal Behaviour		145-165	2021	Springer	No - book chapter (review)	No	No
<b>99</b>	<b>Yang, Yusan; Servedio, Maria R; Richards-Zawacki, Corinne L;</b>	<b>Imprinting sets the stage for speciation</b>	<b>Nature 574</b>	<b>7776</b>	<b>99-102</b>	<b>2019</b>	<b>Nature Publishing Group</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
100	Canal, David; Garamszegi, László Zsolt; Rodriguez-Exposito, Eduardo; Garcia-Gonzalez, Francisco;	Experimental evolution reveals differential evolutionary trajectories in male and female activity levels in response to sexual selection and metapopulation structure	Evolution 76	6	1347-1359	2022	Blackwell Publishing Inc Malden, USA	No - empirical research	No	No

101	<b>Cramer, Emily RA; Kaiser, Sara A; Webster, Michael S; Ryder, T Brandt;</b>	<b>Common field data limitations can substantially bias sexual selection metrics</b>	<b>The American Naturalist 196</b>	<b>2</b>	<b>180-196</b>	<b>2020</b>	<b>The University of Chicago Press Chicago, IL</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
102	Espinoza-Donoso, Sebastián; Angulo-Bedoya, Mónica; Lemic, Darija; Benítez, Hugo A;	Assessing the influence of allometry on sexual and non-sexual traits: An example in <i>Cicindelidia trifasciata</i> (Coleoptera: Cicindelinae) using geometric morphometrics	Zoologischer Anzeiger 287		61-66	2020	Elsevier	No - empirical research	No	No
103	<b>Carvajal-Rodriguez, Antonio;</b>	<b>Non-random mating and information theory</b>	<b>Theoretical population biology 120</b>		<b>103-113</b>	<b>2018</b>	<b>Elsevier</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
104	Schlupp, Ingo;	Male mate choice, female competition, and female ornaments as components of sexual selection	Current Zoology 64	3	321-322	2018	Oxford University Press	No - editorial	No	No
105	Metzler, Dirk; Knief, Ulrich; Penalba, Joshua V; Wolf, Jochen;	Frequency dependent sexual selection, mating trait architecture and preference function govern spatio-temporal hybrid zone dynamics	BioRxiv			2020		No - preprint	No	No



106	Alfonso, Camilo; Jones, Blake C; Vernasco, Ben J; Moore, Ignacio T;	Integrative Studies of Sexual Selection in Manakins, a Clade of Charismatic Tropical Birds	Integrative and Comparative Biology 61	4	1267- 1280	2021	Oxford University Press	No - symposiu m intro	No	No
107	Ryndov, Serge;	The relative roles of natural and sexual selection in the evolution of tardigrade gamete morphology				2021		No - thesis	No	No
108	<b>Avila, Piret; Fromhage, Lutz; Lehmann, Laurent;</b>	<b>Sex-allocation conflict and sexual selection throughout the lifespan of eusocial colonies</b>	<b>Evolution 73</b>	<b>6</b>	<b>1116- 1132</b>	<b>2019</b>	<b>Wiley Online Library</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
109	Petrescu-Mag, I Valentin; Păpuc, Tudor; Botha, Miklos; Balint, Claudia;	Placenta and its implications in sexual selection-a minireview	Poeciliid Research 9	1	25-31	2019	Bioflux SRL	No - review	No	No
110	Andersson, Malte;	2. Genetic Models of Fisherian Self- Reinforcing Sexual Selection	Sexual Selection		32-52	2019	Princeton University Press	No - book chapter (reprint)	No	No
111	Zhongming, Zhu; Linong, Lu; Xiaona, Yao; Wangqiang, Zhang; Wei, Liu;	Fishing can disrupt mating systems				2020		No - empirical research	No	No
112	Progovac, Ljiljana;	Natural/sexual selection: What's language (evolution) got to do with it?	Yearbook of the Poznań Linguistic Meeting 5	1	35-58	2019		No - verbal theory	No	No

113	Greenfield, Michael;	Sexual selection goes dynamic	Peer Community in Evolutionary Biology		100112	2020		No - recommendation for article	No	No
114	Schlupp, Ingo;	Male Choice, Female Competition, and Female Ornaments in Sexual Selection				2021	Oxford University Press	No - book	No	No
115	Ah-King, Malin;	Conclusions: An Epistemology of Ignorance in Sexual Selection	The Female Turn		275-312	2022	Springer	No - Book chapter, no theory	No	No
116	Chevalier, Louise; de Coligny, François; Labonne, Jacques;	A demogenetic agent based model for the evolution of traits and genome architecture under sexual selection						No - preprint	No	No
117	Cooper, Mark Ian;	Allometry for sexual dimorphism in millipedes (Diplopoda)	Journal of Entomology and Zoology Studies 6	1	91-96	2018		No - empirical research	No	No
118	Martins, Maria João Fernandes; Puckett, T Markham; Lockwood, Rowan; Swaddle, John P; Hunt, Gene;	High male sexual investment as a driver of extinction in fossil ostracods	Nature 556	7701	366-369	2018	Nature Publishing Group	No - empirical research	No	No
119	Cooper, Mark Ian;	Sexual size dimorphism and the rejection of Rensch's rule in Diplopoda (Arthropoda)	Journal of Entomology and Zoology Studies 6	1	1582-1587	2018		No - empirical research	No	No

120	Agan, Justin W;	Precocial Sexual Selection in <i>Crotaphytus collaris</i> : A Field Study				2021	Oklahoma State University	No - thesis	No	No
121	Kordsmeyer, Tobias L; Hunt, John; Puts, David A; Ostner, Julia; Penke, Lars;	The relative importance of intra- and intersexual selection on human male sexually dimorphic traits	Evolution and Human Behavior 39	4	424-436	2018	Elsevier	No - human sexual selection, no causal model	No	No
122	Aavani, Pooya; Rice, Sean H;	Infectious Disease Modelling				2022		No - Aavani & Rice already included	No	No
123	<b>Dreżewski, Rafał;</b>	<b>The agent-based model and simulation of sexual selection and pair formation mechanisms</b>	<b>Entropy 20</b>	<b>5</b>	<b>342</b>	<b>2018</b>	<b>MDPI</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
124	<b>Chevalier, Louise; De Coligny, François; Labonne, Jacques;</b>	<b>A demogenetic individual based model for the evolution of traits and genome architecture under sexual selection</b>	<b>Peer Community Journal 2</b>			<b>2022</b>		<b>Yes</b>	<b>No</b>	<b>Yes</b>
125	<b>Lehtonen, Jussi;</b>	<b>Bateman gradients from first principles</b>	<b>Nature Communications 13</b>	<b>1</b>	<b>1-8</b>	<b>2022</b>	<b>Nature Publishing Group</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
126	Bocedi, Greta;	Ecological sexual dimorphism is modulated by the spatial scale of intersexual	Journal of Animal Ecology 90	8	1810-1813	2021	Wiley Online Library	No - 'In focus', highlighting another study	No	No

		resource competition								
127	Sandell, Nathalie Linnea Helene;	Experiments of sexual selection and ploidy-specific effects of mutations in yeast				2021	University of British Columbia	No - thesis	No	No
128	Wallace, Dorothy; Dauson, Erin; Pinion, Cassie; Hayashi, Kanoka	Sexual selection is not required: a mathematical model of species with sexually differentiated death rates	BIOMAT 2015: International Symposium on Mathematical and Computational Biology		279-296	2016	World Scientific	No - conference proceedings	No	No
129	<b>Bernhard, Pierre; Hamelin, Frédéric M;</b>	<b>Simple signaling games of sexual selection (Grafen's revisited)</b>	<b>Journal of mathematical biology 69</b>	<b>6</b>	<b>1719-1742</b>	<b>2014</b>	<b>Springer</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
130	Worden, Robert;	Sexual Selection, Bio-Diversity and the Dominance of Sexual Reproduction				2016		No - manuscript	No	No
131	Summers, Kyle; Tumulty, James;	Parental care, sexual selection, and mating systems in neotropical poison frogs	Sexual selection		289-320	2014	Elsevier	No - book chapter, no theory	No	No
132	Padian, Kevin; Horner, John R;	The species recognition hypothesis explains exaggerated structures in non-avian dinosaurs better than sexual selection does	Comptes Rendus Palevol 13	2	97-107	2014	Elsevier	No - empirical research, some verbal theory	No	No

133	Head, Megan L; Jennions, Michael D; Zajitschek, Susanne RK;	Sexual selection: incorporating non-genetic inheritance	Current opinion in behavioral sciences 12		129-137	2016	Elsevier	No - review	No	No
134	McKeown, Jennifer J;	Modelling the evolution of sexual behaviour				2014	University of Stirling	No - thesis	No	No
<b>135</b>	<b>Vargas Bernal, Esteban; Sanabria Malagon, Camilo;</b>	<b>Modeling sexual selection in Túngara frog and rationality of mate choice</b>	<b>Bulletin of Mathematical Biology 79</b>	<b>12</b>	<b>2847-2864</b>	<b>2017</b>	<b>Springer</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
136	Mutoh, Atsuko; Kato, Shohei; Inuzuka, Nobuhiro;	Evolution of Frequency-Dependent Sexual Selection Using Agent-Based Model	ALIFE 14: The Fourteenth International Conference on the Synthesis and Simulation of Living Systems		10-15	2014	MIT Press	No - conference proceedings	No	No
137	Flanagan, SP; Johnson, JB; Rose, E; Jones, AG;	Sexual selection on female ornaments in the sex-role-reversed Gulf pipefish ( <i>Syngnathus scovelli</i> )	Journal of Evolutionary Biology 27	11	2457-2467	2014	Wiley Online Library	No - empirical research	No	No
138	Snook, Rhonda R; Gidaszewski, Nelly A; Chapman, Tracey; Simmons, Leigh W;	Sexual selection and the evolution of secondary sexual traits: sex comb evolution in <i>Drosophila</i>	Journal of evolutionary biology 26	4	912-918	2013	Wiley Online Library	No - empirical research	No	No
139	Henshaw, Jonathan M; Holman, Luke;	Bet-hedging via polyandry: a comment on 'Mating portfolios: bet-hedging, sexual selection and	Proceedings of the Royal Society B: Biological Sciences 282	1809	20150346	2015	The Royal Society	No - commentary	No	No

		female multiple mating'								
140	Hedhly, Afif; Wünsch, Ana; Kartal, Ö; Herrero, M; Hormaza, JI;	Paternal-specific S-allele transmission in sweet cherry ( <i>Prunus avium</i> L.): the potential for sexual selection	Journal of evolutionary biology 29	3	490-501	2016	Wiley Online Library	No - empirical research	No	No
141	Roughgarden, Joan; Adkins-Regan, Elizabeth; Akçay, Erol; Crawford, Jeremy Chase; Gadagkar, Raghavendra; Griffith, Simon C; Hinde, Camilla A; Hoquet, Thierry; O'Connor, Cailin; Prokop, Zofia M;	Sexual selection studies: a NESCent catalyst meeting				2015		No - meeting proceedings	No	No
142	McDonald, Grant C;	Competitive structure and the operation of sexual selection				2014	Oxford University , UK	No - thesis	No	No
143	Martinossi-Alibert, Ivain;	Sexual Selection and Adaptation to Novel Environments				2017	Acta Universitatis Upsaliensis	No - thesis	No	No
144	Nie, Haiyan; Kaneshiro, Kenneth;	Sexual selection and incipient speciation in Hawaiian <i>Drosophila</i>	Science bulletin 61	2	125-131	2016	Elsevier	No - empirical work	No	No
145	Chelliah, Karpagam;	Sexual Selection On Elephant Tusks				2017		No - thesis	No	No

146	de Lanuza, G Pérez I; Font, E; Monterde, JL;	Using visual modelling to study the evolution of lizard coloration: sexual selection drives the evolution of sexual dichromatism in lacertids	J Evol Biol 26		1826-1835	2013		No - empirical research	No	No
147	Liu, Yu;	Sexual selection strategy of northeastern Chinese Barn Swallows ( <i>Hirundo rustica</i> )				2017	Queen Mary University of London	No - thesis	No	No
148	Sá-Pinto, Xana; Cardia, Pedro; Campos, Rita;	Sexual selection: A short review on its causes and outcomes, and activities to teach evolution and the nature of science	The American Biology Teacher 79	2	135-143	2017	University of California Press USA	No - review	No	No
149	Kamimura, Yoshitaka;	Pre-and postcopulatory sexual selection and the evolution of sexually dimorphic traits in earwigs ( <i>Dermaptera</i> )	Entomological Science 17	2	139-166	2014	Wiley Online Library	No - review	No	No
150	i de Lanuza, G Pérez; Font, E; Monterde, JL;	Using visual modelling to study the evolution of lizard coloration: sexual selection drives the evolution of sexual dichromatism in lacertids	Journal of evolutionary biology 8	26	1826-1835	2013		No - empirical research	No	No

151	Belle, Sarie Van; Bicca-Marques, Júlio César;	Insights into reproductive strategies and sexual selection in howler monkeys	Howler monkeys		57-84	2015	Springer	No - book chapter (review)	No	No
152	Roughgarden, Joan; Adkins-Regan, Elizabeth; Akçay, Erol; Crawford, Jeremy Chase; Gadagkar, Raghavendra;	Sexual Selection Studies: A NESCent Catalyst						No - meeting proceedings	No	No
153	Roughgarden, Joan; Adkins-Regan, Elizabeth; Akçay, Erol; Crawford, Jeremy Chase; Gadagkar, Raghavendra; Griffith, Simon C; Hinde, Camilla; Hoquet, Thierry; O'Connor, Cailin; Prokop, Zofia M;	Sexual selection studies: A NESCent catalyst meeting	PeerJ PrePrints 2		e680v1	2014	PeerJ Inc. San Francisco, USA	No - preprint	No	No
154	Gavrilets, Sergey;	Is sexual conflict an "engine of speciation"?	Cold Spring Harbor perspectives in biology 6	12	a017723	2014	Cold Spring Harbor Lab	No - perspective, with no new theory.	No	No
155	<b>Patinvoh, Regina Jijoho; Susu, Alfred Akpoveta;</b>	<b>Mathematical modelling of sterile insect technology for mosquito control</b>	<b>Advances in Entomology 2</b>	<b>4</b>	<b>180</b>	<b>2014</b>	<b>Scientific Research Publishing</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
156	Martinossi-Alilibert, Ivain; Rueffler, Claus; Arnqvist,	The efficiency of purifying sexual selection under				2017		No - preprint	No	No



	Göran; Berger, David;	environmental change								
157	Henshaw, Jonathan;	Models of Mating System Evolution: Gamete Competition, Hermaphroditism and Sexual Selection				2017	The Australian National University	No - thesis	No	No
158	<b>Collins, Jason; Baer, Boris; Weber, Ernst Juerg;</b>	<b>Sexual selection, conspicuous consumption and economic growth</b>	<b>Journal of Bioeconomics 17</b>	<b>2</b>	<b>189-206</b>	<b>2015</b>	<b>Springer</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
159	Adamson, Joel James;	The evolution of age-dependent sexual signals				2015	The University of North Carolina at Chapel Hill	No - thesis	No	No
160	Nadal, Marcos;	Altruism and Sexual Selection– Lucrecia Burges, Camilo J. Cela Conde	Sex, Reproduction and Darwinism		143-156	2015	Routledge	No - book chapter, verbal only	No	No
161	Martin, AM; Festa-Bianchet, M; Coltman, DW; Pelletier, F;	Comparing measures of breeding inequality and opportunity for selection with sexual selection on a quantitative character in bighorn rams	Journal of evolutionary biology 28	1	223-230	2015	Wiley Online Library	No - empirical research	No	No
162	Ståhl, Niclas;	The Effect of Sexual Selection on				2016		No - thesis	No	No

		Cline Patterns in Biological Traits								
163	Caspari, Ernst;	Sexual selection in human evolution	Sexual selection and the descent of man		332-356	2017	Routledge	No - book chapter (reprint)	No	No
164	Roughgarden, Joan; Adkins-Regan, Elizabeth; Akçay, Erol; Crawford, Jeremy Chase; O'Connor, Zofia M; Prum11, Richard O; Shafir12, Sharoni; Snow13, Samuel S; Taylor14, Daniel; Van Cleve15, Jeremy;	Sexual Selection Studies						No - meeting proceedings	No	No
165	Padian, Kevin; Horner, John R;	Darwin's sexual selection: Understanding his ideas in context	Comptes Rendus Palevol 13	8	709-715	2014	Elsevier	No - verbal analysis	No	No
166	Alcock, John;	Sexual selection and the mating behavior of solitary bees	Advances in the Study of Behavior 45		1-48	2013	Elsevier	No - review	No	No
167	De Ridder, Dirk; Vanneste, Sven;	The artful mind: sexual selection and an evolutionary neurobiological approach to aesthetic appreciation	Perspectives in Biology and Medicine 56	3	327-340	2013	Johns Hopkins University Press	No - review	No	No
168	Punzalan, David; Rowe, Locke;	Concordance between stabilizing sexual selection, intraspecific variation, and	Ecology and Evolution 6	22	7997-8009	2016	Wiley Online Library	No-empirical research	No	No

		interspecific divergence in Phymata								
169	Oláh, János; Chvojka, Pavel; Coppa, Gennaro; Graf, Wolfram; Ibrahimi, Halil;	The genus <i>Allogamus</i> Schmid, 1955 (Trichoptera, Limnephilidae): revised by sexual selection-driven adaptive, non-neutral traits of the phallic organ	Opuscula Zoologica (Budapest) 45	1	33-82	2014		No - empirical research	No	No
170	<b>Yeh, Douhan Justin; Servedio, Maria R;</b>	<b>Reproductive isolation with a learned trait in a structured population</b>	<b>Evolution 69</b>	<b>7</b>	<b>1938-1947</b>	<b>2015</b>	<b>Wiley Online Library</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
171	Dutton, Edward; Madison, Guy;	Why do Finnish men marry Thai women but Finnish women marry British men? Cross-national marriages in a modern, industrialized society exhibit sex-dimorphic sexual selection according to primordial selection pressures	Evolutionary Psychological Science 3	1	1-9	2017	Springer	No - analysis of marriage date	No	No
172	Gayon, Jean;	Sexual Selection in the French School of Population Genetics: Claudine Petit (1920–2007)	Current Perspectives on Sexual Selection		65-81	2015	Springer	No - book chapter (not theory)	No	No
173	Robert, Thomas;	Wallace and Darwin on Man: a	SCIENTIFIC COSMOPOLITANISM AND LOCAL		590			No - verbal only	No	No

		Limitation of Natural Selection?	CULTURES: RELIGIONS, IDEOLOGIES, SOCIETIES							
174	Richards, Evelleen;	FOURTEEN. The Post-Descent Years: Sexual Selection in Crisis, Female Choice at Large	Darwin and the Making of Sexual Selection		466-516	2017	University of Chicago Press	No - Book chapter, no theory	No	No
175	Hughes, Austin L;	Sexual selection and mate choice: Insights from neutralist perspectives	Evolutionary Biology 42	3	366-378	2015	Springer	No - essay	No	No
176	Bouwma-Gearhart, Jana; Bouwma, Andrew;	Inquiry through Modeling: Investigation Exploring the Tensions between Natural & Sexual Selection Using Crickets	The American Biology Teacher 42	2	128-133	2015	University of California Press USA	No - student excercises	No	No
177	Birand Özsoy, Ayşegül Ceren; Kiratli, Ozan; Akoz, Gokce; Alici, Yetkin;	Theoretical Models On Speciation.				2014		No - not peer reviewed	No	No
178	Kruuk, Loeske EB; Clutton-Brock, Tim; Pemberton, Josephine M;	Case study: quantitative genetics and sexual selection of weaponry in a wild ungulate	Quantitative Genetics in the Wild			2014	Oxford University Press Oxford, United Kingdom	No - book chapter, data analysis	No	No
179	Bazyan, Saloume;	Sexual selection and extinction in deer				2013		No - thesis	No	No

180	Xue, Fei; Fang, Guangzhan; Yue, Xizi; Zhao, Ermi; Brauth, Steven E; Tang, Yezhong;	A lateralized functional auditory network is involved in anuran sexual selection	Journal of biosciences 41	4	713-726	2016	Springer	No - empirical research	No	No
<b>181</b>	<b>Holman, Luke; Kokko, Hanna;</b>	<b>Local adaptation and the evolution of female choice</b>	<b>Genotype-by-environment interactions and sexual selection</b>		<b>41-62</b>	<b>2014</b>	<b>Wiley-Blackwell Hoboken, NJ</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>
182	Ball, Gregory F; Balthazart, Jacques; McCarthy, Margaret M;	Is it useful to view the brain as a secondary sexual characteristic?	Neuroscience & Biobehavioral Reviews 46		628-638	2014	Elsevier	No - review	No	No
183	Servedio, Maria R;	Advances on the interplay of learning and sexual selection	Current Zoology 61	6	1004-1007	2015	Oxford University Press Oxford, UK	No - editorial	No	No
184	Vall, Gemma; Gutiérrez, Fernando; Peri, Josep M; Gárriz, Miguel; Baillés, Eva; Garrido, Juan Miguel; Obiols, Jordi E;	Seven dimensions of personality pathology are under sexual selection in modern Spain	Evolution and Human Behavior 37	3	169-178	2016	Elsevier	No - empirical research	No	No
185	Dhole, Sumit;	Evolution of reproductive traits under pre-and post-mating sexual selection				2014	The University of North Carolina at Chapel Hill	No - thesis	No	No
186	Rudoy, Andrey; Ribera, Ignacio;	Evolution of sexual dimorphism and Rensch's rule in the beetle genus <i>Limnebius</i> (Hydraenidae): is	PeerJ 5		e3060	2017	PeerJ Inc.	No - empirical research	No	No

		sexual selection opportunistic?								
187	Okanoya, Kazuo;	Evolution of song complexity in Bengalese finches: Sexual selection and domestication as two factors	The Journal of the Acoustical Society of America 138	3	1880-1880	2015	Acoustical Society of America	No - empirical research	No	No
188	Cogliati, Karen M; Mistakidis, Allison F; Marentette, Julie R; Lau, Adrienne; Bolker, Benjamin M; Neff, Bryan D; Balshine, Sigal;	Comparing population level sexual selection in a species with alternative reproductive tactics	Behavioral Ecology 25	6	1524-1533	2014	Oxford University Press UK	No - empirical research	No	No
189	Ankita, Dubey; Geetanjali, Mishra;	Adult body size drives sexual selection mutually in the ladybird, <i>Menochilus sexmaculatus</i> (Coleoptera: Coccinellidae).	Acta Entomologica Sinica 59	2	209-218	2016	Editorial Office of Acta Entomologica Sinica	No - empirical research	No	No
190	Nieberding, Caroline M; San Martin, Gilles; Saenko, Suzanne; Allen, Cerisse E; Brakefield, Paul M; Visser, Bertanne;	Partial restoration of mutational robustness after addition of genetic polymorphism and in the presence of sexual selection	BioRxiv		197194	2017	Cold Spring Harbor Laboratory	No - preprint	No	No
191	Godwin, Joanne;	Consequences of sexual selection for reproductive and life history traits in <i>Tribolium castaneum</i>				2016	University of East Anglia	No - thesis	No	No
192	<b>Nakahashi, Wataru;</b>	<b>Cultural sexual selection in</b>	<b>Royal Society Open Science 4</b>	<b>6</b>	<b>160946</b>	<b>2017</b>	<b>The Royal</b>	<b>Yes</b>	<b>No</b>	<b>Yes</b>

		<b>monogamous human populations</b>					<b>Society Publishing</b>			
193	Tidière, Morgane;	The diversity of actuarial senescence across mammals: demographic data from captive populations reveal the influence of sexual selection				2016	Université de Lyon	No - thesis	No	No
194	Jennions, Michael D; Kokko, Hanna	Sexual Selection	Evolutionary Behavioral Ecology.				Oxford University Press Oxford, United Kingdom	No - book chapter (review)	No	No
195	Southern, Helen;	The role of sexual selection in fertilisation within the <i>Drosophila obscura</i> species group				2016	University of Sheffield	No - thesis	No	No
196	Odom, Karan J; Hall, Michelle L; Riebel, Katharina; Omland, Kevin E; Langmore, Naomi E;	Female song is widespread and ancestral in songbirds	Nature communications 5	1	1-6	2014	Nature Publishing Group	No - empirical research	No	No
197	Flanagan, Sarah P; Jones, Adam G;	Genome-wide selection components analysis in a fish with male pregnancy	Evolution 71	4	1096-1105	2017	Wiley Online Library	No - empirical research	No	No
198	Hankin, Benjamin L;	Critical reflections on evolutionary				2013	American Psycholo	No - comment	No	No

		psychology and sexual selection theory as explanatory account of emergence of sex differences in psychopathology: comment on Martel (2013).					gical Association	on evolutionary psychology		
199	Baldassarre, Daniel;	Sexual selection and speciation in the red-backed fairy-wren				2014	Cornell University	No - thesis	No	No
200	Sanchez-Donoso, Ines; Morales-Rodriguez, Pablo Antonio; Puigcerver, Manel; Caballero de la Calle, José Ramón; Vilà, Carles; Rodríguez-Teijeiro, José Domingo;	Postcopulatory sexual selection favors fertilization success of restocking hybrid quails over native Common quails ( <i>Coturnix coturnix</i> )	Journal of Ornithology 157	1	33-42	2016	Springer	No - empirical research	No	No



**Supplementary table S4:** Subset of the top 200 search results in google scholar when searching for mathemat\* OR model\* "sexual selection" from 2013 until 2023, on January 17<sup>th</sup>, 2023 that are theory papers with a causal mathematical model of sexual selection.

#	Authors	Title	Year	Symmetric?	Defines the sexes?
8	McDonald, Grant C; Pizzari, Tommaso;	Structure of sexual networks determines the operation of sexual selection	2018	Asymmetric model	No
9	Kokko, Hanna; Jennions, Michael D;	The relationship between sexual selection and sexual conflict	2014	Asymmetric model	Yes
15	Servedio, Maria R; Bürger, Reinhard;	The counterintuitive role of sexual selection in species maintenance and speciation	2014	Asymmetric model	No
16	Parker, Geoff A;	The sexual cascade and the rise of pre-ejaculatory (Darwinian) sexual selection, sex roles, and sexual conflict	2014	Asymmetric model	Yes
18	Martinossi-Alibert, Ivain; Rueffler, Claus; Arnqvist, Göran; Berger, David;	The efficacy of good genes sexual selection under environmental change	2019	Asymmetric model	No
25	Martínez-Ruiz, Carlos; Knell, Robert J;	Sexual selection can both increase and decrease extinction probability: reconciling demographic and evolutionary factors	2017	Asymmetric model	No

26	Henshaw, Jonathan M; Kahn, Andrew T; Fritzsche, Karoline;	A rigorous comparison of sexual selection indexes via simulations of diverse mating systems	2016	Asymmetric model	No
31	Mendelson, Tamra C; Martin, Michael D; Flaxman, Samuel M;	Mutation-order divergence by sexual selection: Diversification of sexual signals in similar environments as a first step in speciation	2014	Asymmetric model	No
39	Henshaw, Jonathan M; Jones, Adam G;	Fisher's lost model of runaway sexual selection	2020	Asymmetric model	No
47	Chandler, Christopher H; Ofria, Charles; Dworkin, Ian;	Runaway sexual selection leads to good genes	2013	Asymmetric model	Yes
52	Mullon, Charles; Wright, Alison E; Reuter, Max; Pomiankowski, Andrew; Mank, Judith E;	Evolution of dosage compensation under sexual selection differs between X and Z chromosomes	2015	Asymmetric model	No
56	Veller, Carl; Muralidhar, Pavitra; Haig, David;	On the logic of Fisherian sexual selection	2020	Asymmetric model	No

57	Klug, Hope; Langley, Chelsea; Reyes, Elijah;	Cascading effects of pre-adult survival on sexual selection	2022	Asymmetric model	No
59	Aavani, Pooya; Rice, Sean H;	When sexual selection in hosts benefits parasites	2022	Asymmetric model	No
60	Levitan, Don R;	Do sperm really compete and do eggs ever have a choice? Adult distribution and gamete mixing influence sexual selection, sexual conflict, and the evolution of gamete recognition proteins in the sea	2018	Asymmetric model	No
62	Muniz, Danilo G; Machado, Glauco;	Mate sampling influences the intensity of sexual selection and the evolution of costly sexual ornaments	2018	Asymmetric model	No
63	Tazzyman, Samuel J; Iwasa, Yoh; Pomiankowski, Andrew;	Signaling efficacy drives the evolution of larger sexual ornaments by sexual selection	2014	Asymmetric model	No
65	García-Roa, Roberto; Serra, Manuel; Carazo, Pau;	Ageing via perception costs of reproduction magnifies sexual selection	2018	Asymmetric model	No
66	Klug, Hope; Langley, Chelsea; Reyes, Elijah;	Resource acquisition and pre-copulatory sexual selection	2022	Asymmetric model	No

74	Fitzpatrick, Courtney L; Servedio, Maria R;	Male mate choice, male quality, and the potential for sexual selection on female traits under polygyny	2017	Asymmetric model	No
76	Servedio, Maria R; Bürger, Reinhard;	The effects of sexual selection on trait divergence in a peripheral population with gene flow	2015	Asymmetric model	No
77	Faria, Gonçalo S; Gardner, Andy; Carazo, Pau;	Kin discrimination and demography modulate patterns of sexual conflict	2020	Asymmetric model	No
78	Faria, Gonçalo S; Varela, Susana AM; Gardner, Andy;	Sexual selection modulates genetic conflicts and patterns of genomic imprinting	2017	Asymmetric model	No
81	Gahtan, Ethan; Mark, Quentin J;	Did sexual selection and culture interact in the evolution of human height?	2013	Asymmetric model	No
82	Petrie, Marion;	Evolution by sexual selection	2021	Asymmetric model	No
92	Klug, Hope; Stone, Libby;	More than just noise: Chance, mating success, and sexual selection	2021	Asymmetric model	No
94	Watts, J Colton; Hebets, Eileen A; Tenhumberg, Brigitte;	Mate Sampling Behavior Determines the Density Dependence of Sexual Selection	2022	Asymmetric model	No
99	Yang, Yusan; Servedio, Maria R; Richards-Zawacki, Corinne L;	Imprinting sets the stage for speciation	2019	Asymmetric model	No

101	Cramer, Emily RA; Kaiser, Sara A; Webster, Michael S; Ryder, T Brandt;	Common field data limitations can substantially bias sexual selection metrics	2020	Asymmetric model	No
103	Carvajal-Rodriguez, Antonio;	Non-random mating and information theory	2018	Symmetric model, asymmetric parametrisation	No
108	Avila, Piret; Fromhage, Lutz; Lehmann, Laurent;	Sex-allocation conflict and sexual selection throughout the lifespan of eusocial colonies	2019	Asymmetric model	No
123	Dreżewski, Rafał;	The agent-based model and simulation of sexual selection and pair formation mechanisms	2018	Asymmetric model	No
124	Chevalier, Louise; De Coligny, François; Labonne, Jacques;	A demogenetic individual based model for the evolution of traits and genome architecture under sexual selection	2022	Symmetric model, symmetric parameters	No
125	Lehtonen, Jussi;	Bateman gradients from first principles	2022	Symmetric model, asymmetric parameters	Yes
129	Bernhard, Pierre; Hamelin, Frédéric M;	Simple signaling games of sexual selection (Grafen's revisited)	2014	Asymmetric model	No
135	Vargas Bernal, Esteban; Sanabria Malagon, Camilo;	Modeling sexual selection in Túngara frog and rationality of mate choice	2017	Asymmetric model	No
155	Patinvoh, Regina Jijoho; Susu, Alfred Akpoveta;	Mathematical modelling of sterile insect technology for mosquito control	2014	Asymmetric model	No

158	Collins, Jason; Baer, Boris; Weber, Ernst Juerg;	Sexual selection, conspicuous consumption and economic growth	2015	Asymmetric model	No
170	Yeh, Douhan Justin; Servedio, Maria R;	Reproductive isolation with a learned trait in a structured population	2015	Asymmetric model	No
181	Holman, Luke; Kokko, Hanna;	Local adaptation and the evolution of female choice	2014	Asymmetric model	No
192	Nakahashi, Wataru;	Cultural sexual selection in monogamous human populations	2017	Asymmetric model	No