

BIBLIOGRAPHY

- [Abbot et al., 2011] Abbot, P., Abe, J., Alcock, J., Alizon, S., Alpedrinha, J. A. C., Andersson, M., Andre, J.-B., et al. (2011). Inclusive fitness theory and eusociality. *Nature*, 471:E1–E4.
- [Allen et al., 2013] Allen, B., Nowak, M. A., and Wilson, E. O. (2013). Limitations of inclusive fitness. *Proceedings of the National Academy of Sciences*, 110:20135–20139.
- [Alpedrinha et al., 2014] Alpedrinha, J., Gardner, A., and West, S. A. (2014). Haplodiploidy and the evolution of eusociality: worker revolution. *American Naturalist*, 184:303–317.
- [Alpedrinha et al., 2013] Alpedrinha, J., West, S. A., and Gardner, A. (2013). Haplodiploidy and the evolution of eusociality: worker reproduction. *American Naturalist*, 182(4):421–438.
- [Archetti and Scheuring, 2011] Archetti, M. and Scheuring, I. (2011). Coexistence of cooperation and defection in public goods games. *Evolution*, 65(4):1140–1148.
- [Archetti and Scheuring, 2012] Archetti, M. and Scheuring, I. (2012). Review: game theory of public goods in one-shot social dilemmas without assortment. *Journal of Theoretical Biology*, 299:9–20.
- [Axelrod, 1984] Axelrod, R. (1984). *The Evolution of Cooperation*. Basic Books.
- [Axelrod and Hamilton, 1981] Axelrod, R. and Hamilton, W. D. (1981). The evolution of cooperation. *Science*, 211(4489):1390–1396.
- [Bateson, 1909] Bateson, W. (1909). *Mendel's Principles of Heredity*. Cambridge University Press, Cambridge.
- [Biernaskie et al., 2011] Biernaskie, J. M., West, S. A., and Gardner, A. (2011). Are greenbeards intragemonic outlaws? *Evolution*, 65(10):2729–2742.
- [Birch, 2013] Birch, J. (2013). *Kin Selection: A Philosophical Analysis*. PhD thesis, University of Cambridge.
- [Birch and Marshall, 2014] Birch, J. and Marshall, J. A. R. (2014). Queller's separation condition explained and defended. *American Naturalist* 184, 531–540.
- [Boomsma, 2007] Boomsma, J. J. (2007). Kin selection versus sexual selection: why the ends do not meet. *Current Biology*, 17(16):R673–R683.
- [Boomsma, 2009] Boomsma, J. J. (2009). Lifetime monogamy and the evolution of eusociality. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 364(1533):3191–3207.
- [Boomsma, 2013] Boomsma, J. J. (2013). Beyond promiscuity: mate-choice commitments in social breeding. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 368.
- [Boomsma et al., 2011] Boomsma, J. J., Beekman, M., Cornwallis, C. K., Griffin, A. S., Holman, L., Hughes, W. O., Keller, L., Oldroyd, B. P., and Ratnieks, F. (2011). Only full-sibling families evolved eusociality. *Nature*, 471:E4–E5.
- [Boorman and Levitt, 1980] Boorman, S. A. and Levitt, P. R. (1980). *The Genetics of Altruism*. Academic Press.

- [Bourke, 2011a] Bourke, A. F. G. (2011a). *Principles of Social Evolution*. Oxford University Press, Oxford.
- [Bourke, 2011b] Bourke, A. F. G. (2011b). The validity and value of inclusive fitness theory. *Proceedings of the Royal Society B: Biological Sciences*, 278(1723):3313–3320.
- [Bourke, 2014] Bourke, A. F. G. (2014). Hamilton's rule and the causes of social evolution. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 369. doi:10.1098/rstb.2013.0362.
- [Bourke and Franks, 1995] Bourke, A. F. G. and Franks, N. R. (1995). *Social Evolution in Ants*. Princeton University Press.
- [Boyd et al., 2011] Boyd, R., Richerson, P. J., and Henrich, J. (2011). Rapid cultural adaptation can facilitate the evolution of large-scale cooperation. *Behavioral Ecology and Sociobiology*, 65(3): 431–444.
- [Burda et al., 2000] Burda, H., Honeycutt, R. L., Begall, S., Locker-Grütjen, O., and Scharff, A. (2000). Are naked and common mole-rats eusocial and if so, why? *Behavioral Ecology and Sociobiology*, 47(5):293–303.
- [Buss, 1987] Buss, L. (1987). *The Evolution of Individuality*. Princeton University Press.
- [Cavalli-Sforza and Feldman, 1978] Cavalli-Sforza, L. L. and Feldman, M. W. (1978). Darwinian selection and “altruism”. *Theoretical Population Biology*, 14(2):268–280.
- [Chittka and Chittka, 2010] Chittka, A. and Chittka, L. (2010). Epigenetics of royalty. *PLoS Biology*, 8(11):e1000532.
- [Clutton-Brock, 2002] Clutton-Brock, T. (2002). Breeding together: kin selection and mutualism in cooperative vertebrates. *Science*, 296(5565):69–72.
- [Clutton-Brock, 2009] Clutton-Brock, T. (2009). Cooperation between non-kin in animal societies. *Nature*, 462(7269):51–57.
- [Clutton-Brock et al., 2001] Clutton-Brock, T. H., Brotherton, P. N. M., O'Riain, M. J., Griffin, A. S., Gaynor, D., Kansky, R., Sharpe, L., and McIlrath, G. M. (2001). Contributions to cooperative rearing in meerkats. *Animal Behaviour*, 61(4):705–710.
- [Clutton-Brock et al., 2000] Clutton-Brock, T. H., Brotherton, P. N. M., O'Riain, M. J., Griffin, A. S., Gaynor, D., Sharpe, L., Kansky, R., Manser, M. B., and McIlrath, G. M. (2000). Individual contributions to babysitting in a cooperative mongoose, *Suricata suricatta*. *Proceedings of the Royal Society B: Biological Sciences*, 267(1440):301–305.
- [Clutton-Brock et al., 1998] Clutton-Brock, T. H., Gaynor, D., Kansky, R., MacColl, A. D. C., McIlrath, G., Chadwick, P., Brotherton, P. N. M., O'Riain, M. J., Manser, M., and Skinner, J. D. (1998). Costs of cooperative behaviour in suricates (*Suricata suricatta*). *Proceedings of the Royal Society B: Biological Sciences*, 265(1392):185–190.
- [Clutton-Brock et al., 1999] Clutton-Brock, T. H., O'Riain, M. J., Brotherton, P. N. M., Gaynor, D., Kansky, R., Griffin, A. S., and Manser, M. (1999). Selfish sentinels in cooperative mammals. *Science*, 284(5420):1640–1644.
- [Cornwallis et al., 2010] Cornwallis, C. K., West, S. A., Davis, K. E., and Griffin, A. S. (2010). Promiscuity and the evolutionary transition to complex societies. *Nature*, 466(7309):969–972.
- [Craig, 1979] Craig, R. (1979). Parental manipulation, kin selection, and the evolution of altruism. *Evolution*, 33:319–334.
- [Crespi, 2001] Crespi, B. J. (2001). The evolution of social behavior in microorganisms. *Trends in Ecology & Evolution*, 16(4):178–183.
- [Crespi and Yanega, 1995] Crespi, B. J. and Yanega, D. (1995). The definition of eusociality. *Behavioral Ecology*, 6(1):109–115.
- [Crozier, 1986] Crozier, R. H. (1986). Genetic clonal recognition abilities in marine invertebrates must be maintained by selection for something else. *Evolution*, 40(5):1100–1101.
- [Darwin, 1859] Darwin, C. (1859). *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*. John Murray, 6th edition.
- [Darwin, 1871] Darwin, C. (1871). *The Descent of Man, and Selection in Relation to Sex*. John Murray, London.

- [Darwin and Wallace, 1858] Darwin, C. and Wallace, A. R. (1858). On the tendency of species to form varieties; and on the perpetuation of varieties and species by means of natural selection. *Journal of the Proceedings of the Linnean Society: Zoology*, 3:45–62.
- [Dawkins, 1976] Dawkins, R. (1976). *The Selfish Gene*. Oxford University Press.
- [Day and Taylor, 1997] Day, T. and Taylor, P. D. (1997). Hamilton's rule meets the Hamiltonian: kin selection on dynamic characters. *Proceedings of the Royal Society B: Biological Sciences*, 264:639–644.
- [Dieckmann, 1985] Dieckmann, A. (1985). Volunteer's dilemma. *Journal of Conflict Resolution*, 29:605–610.
- [Dijkstra and Boomsma, 2006] Dijkstra, M. B. and Boomsma, J. J. (2006). Are workers of *Atta* leafcutter ants capable of reproduction? *Insectes Sociaux*, 53(2):136–140.
- [Dijkstra et al., 2005] Dijkstra, M. B., Nash, D. R., and Boomsma, J. J. (2005). Self-restraint and sterility in workers of *Acromyrmex* and *Atta* leafcutter ants. *Insectes Sociaux*, 52(1):67–76.
- [Edwards, 2013] Edwards, A. W. F. (2013). R.A. Fisher's gene-centred view of evolution and the Fundamental Theorem of Natural Selection. *Biological Reviews*, 89:135–147.
- [Emlen, 1982] Emlen, S. T. (1982). The evolution of helping. II. The role of behavioral conflict. *American Naturalist*, 119:40–53.
- [Falconer and Mackay, 1996] Falconer, D. S. and Mackay, T. F. C. (1996). *Introduction to Quantitative Genetics*. Pearson, fourth edition.
- [Ferriere and Michod, 2011] Ferriere, R. and Michod, R. E. (2011). Inclusive fitness in evolution. *Nature*, 471:E6–E8.
- [Fisher, 1930] Fisher, R. A. (1930). *The Genetical Theory of Natural Selection*. Clarendon Press, Oxford.
- [Fisher, 1941] Fisher, R. A. (1941). Average excess and average effect of a gene substitution. *Annals of Eugenics*, 11(1):53–63.
- [Fisher et al., 2013] Fisher, R. M., Cornwallis, C. K., and West, S. A. (2013). Group formation, relatedness, and the evolution of multicellularity. *Current Biology*, 23:1120–1125.
- [Fletcher and Doebeli, 2009] Fletcher, J. A. and Doebeli, M. (2009). A simple and general explanation for the evolution of altruism. *Proceedings of the Royal Society B: Biological Sciences*, 276:13–19.
- [Fletcher and Zwick, 2006] Fletcher, J. A. and Zwick, M. (2006). Unifying the theories of inclusive fitness and reciprocal altruism. *American Naturalist*, 168(2):252–262.
- [Fletcher et al., 2006] Fletcher, J. A., Zwick, M., Doebeli, M., and Wilson, D. S. (2006). What's wrong with inclusive fitness? *Trends in Ecology and Evolution*, 21(11):597–598.
- [Foster, 2008] Foster, K. R. (2008). Behavioral ecology: altruism. *Encyclopedia of Ecology*, pages 154–159.
- [Foster, 2009] Foster, K. R. (2009). A defense of sociobiology. In *Cold Spring Harbor Symposia on Quantitative Biology*, volume 74, pages 403–418. Cold Spring Harbor Laboratory Press.
- [Foster, 2011] Foster, K. R. (2011). The secret social lives of microorganisms. *Microbe*, 6:183–186.
- [Foster and Wenseleers, 2006] Foster, K. R. and Wenseleers, T. (2006). A general model for the evolution of mutualisms. *Journal of Evolutionary Biology*, 19(4):1283–1293.
- [Foster et al., 2001] Foster, K. R., Wenseleers, T., and Ratnieks, F. L. W. (2001). Spite: Hamilton's unproven theory. *Annales Zoologici Fennici*, 38:229–238.
- [Foster et al., 2006a] Foster, K. R., Wenseleers, T., and Ratnieks, F. L. W. (2006a). Kin selection is the key to altruism. *Trends in Ecology and Evolution*, 21(2):57–60.
- [Foster et al., 2006b] Foster, K. R., Wenseleers, T., Ratnieks, F. L. W., and Queller, D. C. (2006b). There is nothing wrong with inclusive fitness. *Trends in Ecology and Evolution*, 21(11):599–600.
- [Frank, 1994] Frank, S. A. (1994). Genetics of mutualism: the evolution of altruism between species. *Journal of Theoretical Biology*, 170(4):393–400.
- [Frank, 1995] Frank, S. A. (1995). George Price's contributions to evolutionary genetics. *Journal of Theoretical Biology*, 175(3):373–388.
- [Frank, 1997] Frank, S. A. (1997). The Price equation, Fisher's fundamental theorem, kin selection, and causal analysis. *Evolution*, 51:1712–1729.
- [Frank, 1998] Frank, S. A. (1998). *Foundations of Social Evolution*. Princeton University Press.

- [Frank, 2012] Frank, S. A. (2012). Natural selection. IV. The Price equation. *Journal of Evolutionary Biology*, 25(6):1002–1019.
- [Frank, 2013] Frank, S. A. (2013). Natural selection. VII. History and interpretation of kin selection theory. *Journal of Evolutionary Biology*, 26(6):1151–1184.
- [Frank and Slatkin, 1992] Frank, S. A. and Slatkin, M. (1992). Fisher's fundamental theorem of natural selection. *Trends in Ecology and Evolution*, 7(3):92–95.
- [Fromhage and Kokko, 2011] Fromhage, L. and Kokko, H. (2011). Monogamy and haplodiploidy act in synergy to promote the evolution of eusociality. *Nature Communications*, 2:397.
- [Futuyma, 1998] Futuyma, D. J. (1998). *Evolutionary Biology*. Sinauer, third edition.
- [Gardner, 2008] Gardner, A. (2008). The Price equation. *Current Biology*, 18(5):R198–R202.
- [Gardner, 2009] Gardner, A. (2009). Adaptation as organism design. *Biology Letters*, 5(6):861–864.
- [Gardner, 2012] Gardner, A. (2012). Evolution of maternal care in diploid and haplodiploid populations. *Journal of Evolutionary Biology*, 25:1479–1486.
- [Gardner et al., 2012] Gardner, A., Alpedrinha, J., and West, S. A. (2012). Haplodiploidy and the evolution of eusociality: split sex ratios. *American Naturalist*, 179(2):240–256.
- [Gardner and Foster, 2008] Gardner, A. and Foster, K. R. (2008). The evolution and ecology of cooperation—history and concepts. In *Ecology of Social Evolution*, pages 1–36. Springer.
- [Gardner and Grafen, 2009] Gardner, A. and Grafen, A. (2009). Capturing the superorganism: a formal theory of group adaptation. *Journal of Evolutionary Biology*, 22:659–671.
- [Gardner et al., 2007a] Gardner, A., Hardy, I. C. W., Taylor, P. D., and West, S. A. (2007a). Spiteful soldiers and sex ratio conflict in polyembryonic parasitoid wasps. *American Naturalist*, 169(4): 519–533.
- [Gardner and Ross, 2013] Gardner, A. and Ross, L. (2013). Haplodiploidy, sex-ratio adjustment, and eusociality. *American Naturalist*, 181:E60–E67.
- [Gardner and Welch, 2011] Gardner, A. and Welch, J. J. (2011). A formal theory of the selfish gene. *Journal of Evolutionary Biology*, 24:1801–1813.
- [Gardner and West, 2007] Gardner, A. and West, S. A. (2007). Social evolution: the decline and fall of genetic kin recognition. *Current Biology*, 17(18):R810–R812.
- [Gardner and West, 2010] Gardner, A. and West, S. A. (2010). Greenbeards. *Evolution*, 64(1):25–38.
- [Gardner et al., 2007b] Gardner, A., West, S. A., and Barton, N. H. (2007b). The relation between multilocus population genetics and social evolution theory. *American Naturalist*, 169(2):207–226.
- [Gardner et al., 2011] Gardner, A., West, S. A., and Wild, G. (2011). The genetical theory of kin selection. *Journal of Evolutionary Biology*, 24(5):1020–1043.
- [Gilbert et al., 2007] Gilbert, O. M., Foster, K. R., Mehdiabadi, N. J., Strassmann, J. E., and Queller, D. C. (2007). High relatedness maintains multicellular cooperation in a social amoeba by controlling cheater mutants. *Proceedings of the National Academy of Sciences*, 104:8913–8917.
- [Grafen, 1979] Grafen, A. (1979). The hawk–dove game played between relatives. *Animal Behaviour*, 27:905–907.
- [Grafen, 1984] Grafen, A. (1984). *Natural Selection, Kin Selection and Group Selection*, volume Behavioural Ecology: An Evolutionary Approach, chapter 3. Blackwell Publishing, 2nd edition.
- [Grafen, 1985a] Grafen, A. (1985a). A geometric view of relatedness. *Oxford Surveys in Evolutionary Biology*, 2:28–89.
- [Grafen, 1985b] Grafen, A. (1985b). Hamilton's rule OK. *Nature*, 318:310–311.
- [Grafen, 2000] Grafen, A. (2000). Developments of the Price equation and natural selection under uncertainty. *Proceedings of the Royal Society B: Biological Sciences*, 267(1449):1223–1227.
- [Grafen, 2006a] Grafen, A. (2006a). Optimization of inclusive fitness. *Journal of Theoretical Biology*, 238(3):541–563.
- [Grafen, 2006b] Grafen, A. (2006b). Various remarks on Lehmann and Keller's article. *Journal of Evolutionary Biology*, 19(5):1397–1399.
- [Grafen, 2007a] Grafen, A. (2007a). The formal Darwinism project: a mid-term report. *Journal of Evolutionary Biology*, 20(4):1243–1254.

- [Grafen, 2007b] Grafen, A. (2007b). An inclusive fitness analysis of altruism on a cyclical network. *Journal of Evolutionary Biology*, 20(6):2278–2283.
- [Grafen, 2014a] Grafen, A. (2014a). The formal Darwinism project in outline. *Biology and Philosophy*, 29:155–174.
- [Grafen, 2014b] Grafen, A. (2014b). The formal Darwinism project in outline: response to commentaries. *Biology and Philosophy*, 29:281–292.
- [Grafen and Archetti, 2008] Grafen, A. and Archetti, M. (2008). Natural selection of altruism in inelastic viscous homogeneous populations. *Journal of Theoretical Biology*, 252(4):694–710.
- [Grafen and Hails, 2002] Grafen, A. and Hails, R. (2002). *Modern Statistics for the Life Sciences*. Oxford University Press.
- [Griffin and West, 2002] Griffin, A. S. and West, S. A. (2002). Kin selection: fact and fiction. *Trends in Ecology & Evolution*, 17(1):15–21.
- [Griffin and West, 2003] Griffin, A. S. and West, S. A. (2003). Kin discrimination and the benefit of helping in cooperatively breeding vertebrates. *Science*, 302:634–636.
- [Griffin et al., 2004] Griffin, A. S., West, S. A., and Buckling, A. (2004). Cooperation and competition in pathogenic bacteria. *Nature*, 430(7003):1024–1027.
- [Hadfield et al., 2010] Hadfield, J. D., Wilson, A. J., Garant, D., Sheldon, B. C., and Kruuk, L. E. B. (2010). The misuse of blup in ecology and evolution. *American Naturalist*, 175(1):116–125.
- [Haldane, 1932] Haldane, J. B. S. (1932). *The Causes of Evolution*. Longmans, London.
- [Haldane, 1955] Haldane, J. B. S. (1955). Population genetics. *New Biology*, 18:34–51.
- [Hamilton, 1963] Hamilton, W. D. (1963). The evolution of altruistic behavior. *American Naturalist*, 97(896):354–356.
- [Hamilton, 1964a] Hamilton, W. D. (1964a). The genetical evolution of social behaviour I. *Journal of Theoretical Biology*, 7:1–16.
- [Hamilton, 1964b] Hamilton, W. D. (1964b). The genetical evolution of social behaviour II. *Journal of Theoretical Biology*, 7:17–52.
- [Hamilton, 1967] Hamilton, W. D. (1967). Extraordinary sex ratios. *Science*, 156(3774):477–488.
- [Hamilton, 1970] Hamilton, W. D. (1970). Selfish and spiteful behaviour in an evolutionary model. *Nature*, 228(5277):1218–1220.
- [Hamilton, 1971] Hamilton, W. D. (1971). Selection of selfish and altruistic behavior in some extreme models. In *Man and Beast: Comparative Social Behavior*, pages 57–91. Smithsonian Press.
- [Hamilton, 1972] Hamilton, W. D. (1972). Altruism and related phenomena, mainly in social insects. *Annual Review of Ecology and Systematics*, 3(1):193–232.
- [Hamilton, 1975] Hamilton, W. D. (1975). Innate social aptitudes of man: an approach from evolutionary genetics. *Biosocial Anthropology*, pages 133–155.
- [Hamilton, 1996] Hamilton, W. D. (1996). *Narrow Roads of Gene Land Volume 1: Evolution of Social Behaviour*. Oxford University Press.
- [Hamilton, 2001] Hamilton, W. D. (2001). *Narrow Roads of Gene Land Volume 2: Evolution of Sex*. Oxford University Press.
- [Hamilton, 2005] Hamilton, W. D. (2005). *Narrow Roads of Gene Land Volume 3: Last Words*. Oxford University Press.
- [Harman, 2010] Harman, O. S. (2010). *The Price of Altruism: George Price and the Search for the Origins of Kindness*. Bodley Head.
- [Hatchwell, 2009] Hatchwell, B. J. (2009). The evolution of cooperative breeding in birds: kinship, dispersal and life history. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 364:3217–3227.
- [Hatchwell et al., 2014] Hatchwell, B. J., Gullett, P. R., and Adams, M. J. (2014). Helping in cooperatively breeding long-tailed tits: a test of Hamilton's rule. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 369.
- [Hatchwell et al., 2004] Hatchwell, B. J., Russell, A. F., MacColl, A. D. C., Ross, D. J., Fowle, M. K., and McGowan, A. (2004). Helpers increase long-term but not short-term productivity in cooperatively breeding long-tailed tits. *Behavioral Ecology*, 15(1):1–10.

- [Hatchwell and Sharp, 2006] Hatchwell, B. J. and Sharp, S. P. (2006). Kin selection, constraints, and the evolution of cooperative breeding in long-tailed tits. *Advances in the Study of Behavior*, 36: 355–395.
- [Hauert et al., 2006] Hauert, C., Michor, F., Nowak, M. A., and Doebeli, M. (2006). Synergy and discounting of cooperation in social dilemmas. *Journal of Theoretical Biology*, 239(2):195–202.
- [Heisler and Damuth, 1987] Heisler, I. L. and Damuth, J. (1987). A method for analyzing selection in hierarchically structured populations. *American Naturalist*, 130:582–602.
- [Herre and Wcislo, 2011] Herre, E. A. and Wcislo, W. T. (2011). In defence of inclusive fitness theory. *Nature*, 471:E8–E9.
- [Houston and McNamara, 1999] Houston, A. I. and McNamara, J. M. (1999). *Models of Adaptive Behaviour: An Approach Based on State*. Cambridge University Press.
- [Hughes et al., 2008] Hughes, W. O. H., Oldroyd, B. P., Beekman, M., and Ratnieks, F. L. W. (2008). Ancestral monogamy shows kin selection is key to the evolution of eusociality. *Science*, 320(5880):1213–1216.
- [Huxley, 1942] Huxley, J. S. (1942). *Evolution: The Modern Synthesis*. Unwin, London.
- [Jarvis, 1981] Jarvis, J. U. (1981). Eusociality in a mammal: cooperative breeding in naked mole-rat colonies. *Science*, 212(4494):571–573.
- [Jiricny et al., 2010] Jiricny, N., Diggle, S. P., West, S. A., Evans, B. A., Ballantyne, G., Ross-Gillespie, A., and Griffin, A. S. (2010). Fitness correlates with the extent of cheating in a bacterium. *Journal of Evolutionary Biology*, 23(4):738–747.
- [Kokko et al., 2001] Kokko, H., Johnstone, R. A., and Clutton-Brock, T. H. (2001). The evolution of cooperative breeding through group augmentation. *Proceedings of the Royal Society B: Biological Sciences*, 268(1463):187–196.
- [Kruuk et al., 2014] Kruuk, L., Clutton-Brock, T., and Pemberton, J. (2014). Case study: quantitative genetics and sexual selection of weaponry in a wild ungulate. In Charmantier, A., Garant, D., and Kruuk, L. E. B., editors, *Quantitative Genetics in the Wild*, pages 160–176. Oxford University Press.
- [Kruuk et al., 2002] Kruuk, L. E. B., Slate, J., Pemberton, J. M., Brotherstone, S., Guinness, F., and Clutton-Brock, T. (2002). Antler size in red deer: heritability and selection but no evolution. *Evolution*, 56(8):1683–1695.
- [Lahdenperä et al., 2004] Lahdenperä, M., Lummaa, V., Helle, S., Tremblay, M., and Russell, A. F. (2004). Fitness benefits of prolonged post-reproductive lifespan in women. *Nature*, 428:178–181.
- [Lande and Arnold, 1983] Lande, R. and Arnold, S. J. (1983). The measurement of selection on correlated characters. *Evolution*, 37:1210–1226.
- [Leadbeater et al., 2011] Leadbeater, E., Carruthers, J. M., Green, J. P., Rosser, N. S., and Field, J. (2011). Nest inheritance is the missing source of direct fitness in a primitively eusocial insect. *Science*, 333(6044):874–876.
- [Lehmann et al., 2006] Lehmann, L., Bargum, K., and Reuter, M. (2006). An evolutionary analysis of the relationship between spite and altruism. *Journal of Evolutionary Biology*, 19(5):1507–1516.
- [Lehmann and Keller, 2006a] Lehmann, L. and Keller, L. (2006a). Synergy, partner choice and frequency dependence: their integration into inclusive fitness theory and their interpretation in terms of direct and indirect fitness effects. *Journal of Evolutionary Biology*, 19(5):1426–1436.
- [Lehmann and Keller, 2006b] Lehmann, L. and Keller, L. (2006b). The evolution of cooperation and altruism – a general framework and a classification of models. *Journal of Evolutionary Biology*, 19(5):1365–1376.
- [Lehmann et al., 2007] Lehmann, L., Keller, L., and Sumpter, D. J. T. (2007). The evolution of helping and harming on graphs: the return of the inclusive fitness effect. *Journal of Evolutionary Biology*, 20(6):2284–2295.
- [Lehmann and Rousset, 2014] Lehmann, L. and Rousset, F. (2014). Fitness, inclusive fitness, and optimisation. *Biology and Philosophy*, 29:181–195.
- [Lewontin, 1970] Lewontin, R. C. (1970). The units of selection. *Annual Review of Ecology and Systematics*, 1:1–18.

- [Li, 1967] Li, C. C. (1967). Fundamental theorem of natural selection. *Nature*, 214:505–506.
- [Liao et al., 2015] Liao, X., Rong, S., and Queller, D. (2015). Relatedness, conflict and the evolution of eusociality. *PLoS Biology* (in press).
- [Linksvayer and Wade, 2005] Linksvayer, T. A. and Wade, M. J. (2005). The evolutionary origin and elaboration of sociality in the aculeate Hymenoptera: maternal effects, sib-social effects, and heterochrony. *Quarterly Review of Biology*, 80:317–336.
- [Lukas and Clutton-Brock, 2012] Lukas, D. and Clutton-Brock, T. (2012). Cooperative breeding and monogamy in mammalian societies. *Proceedings of the Royal Society B: Biological Sciences*, 279(1736):2151–2156.
- [MacLeod et al., 2013] MacLeod, K. J., Nielsen, J. F., and Clutton-Brock, T. H. (2013). Factors predicting the frequency, likelihood and duration of allonursing in the cooperatively breeding meerkat. *Animal Behaviour*, 86:1059–1067.
- [Marshall, 2009] Marshall, J. A. R. (2009). The donation game with roles played between relatives. *Journal of Theoretical Biology*, 260(3):386–391.
- [Marshall, 2011a] Marshall, J. A. R. (2011a). Group selection and kin selection: formally equivalent approaches. *Trends in Ecology & Evolution*, 26(7):325–332.
- [Marshall, 2011b] Marshall, J. A. R. (2011b). Queller’s rule ok: Comment on van Veelen “when inclusive fitness is right and when it can be wrong”. *Journal of Theoretical Biology*, 270(1):185–188.
- [Marshall, 2011c] Marshall, J. A. R. (2011c). Ultimate causes and the evolution of altruism. *Behavioral Ecology and Sociobiology*, 65(3):503–512.
- [Marshall, 2014] Marshall, J. A. R. (2014). Generalisations of Hamilton’s rule applied to non-additive public goods games with random group size. *Frontiers in Ecology and Evolution*. doi:10.3389/fevo.2014.00040.
- [Marshall and Rowe, 2003] Marshall, J. A. R. and Rowe, J. E. (2003). Kin selection may inhibit the evolution of reciprocity. *Journal of Theoretical Biology*, 222(3):331–335.
- [Maynard Smith, 1964] Maynard Smith, J. (1964). Group selection and kin selection. *Nature*, 201:1145–1147.
- [Maynard Smith, 1982] Maynard Smith, J. (1982). *Evolution and the Theory of Games*. Cambridge University Press.
- [Maynard Smith and Parker, 1976] Maynard Smith, J. and Parker, G. A. (1976). The logic of asymmetric contests. *Animal Behaviour*, 24(1):159–175.
- [Maynard Smith and Price, 1973] Maynard Smith, J. and Price, G. R. (1973). The logic of animal conflict. *Nature*, 246:15–18.
- [Maynard Smith and Szathmáry, 1997] Maynard Smith, J. and Szathmáry, E. (1997). *The Major Transitions in Evolution*. Oxford University Press.
- [McElreath and Boyd, 2008] McElreath, R. and Boyd, R. (2008). *Mathematical Models of Social Evolution: A Guide for the Perplexed*. University of Chicago Press.
- [McGlothlin et al., 2014] McGlothlin, J., Wolf, J., Brodie III, E., and Moore, A. (2014). Quantitative genetic versions of Hamilton’s rule with empirical applications. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 369. doi:10.1098/rstb.2013.0358.
- [McNamara and Houston, 1996] McNamara, J. M. and Houston, A. I. (1996). State-dependent life histories. *Nature*, 380:215–221.
- [McNamara et al., 1994] McNamara, J. M., Houston, A. I., and Webb, J. N. (1994). Dynamic kin selection. *Proceedings of the Royal Society B: Biological Sciences*, 258:23–28.
- [McNamara et al., 2011] McNamara, J. M., Trimmer, P. C., Eriksson, A., Marshall, J. A. R., and Houston, A. I. (2011). Environmental variability can select for optimism or pessimism. *Ecology Letters*, 14(1):58–62.
- [Meade and Hatchwell, 2010] Meade, J. and Hatchwell, B. J. (2010). No direct fitness benefits of helping in a cooperative breeder despite higher survival of helpers. *Behavioral Ecology*, 21(6):1186–1194.

- [Mehdiabadi et al., 2006] Mehdiabadi, N. J., Jack, C. N., Farnham, T. T., Platt, T. G., Kalla, S. E., Shaulsky, G., Queller, D. C., and Strassmann, J. E. (2006). Social evolution: kin preference in a social microbe. *Nature*, 442(7105):881–882.
- [Mendl, 1866] Mendl, G. (1866). Versuche über pflanzen-hybriden. *Verhandlungen des Naturforschenden Vereines in Brunn*, IV:3–47.
- [Metz et al., 1992] Metz, J. A. J., Nisbet, R. M., and Geritz, S. A. H. (1992). How should we define “fitness” for general ecological scenarios? *Trends in Ecology & Evolution*, 7(6):198–202.
- [Michel-Briand and Baysse, 2002] Michel-Briand, Y. and Baysse, C. (2002). The pyocins of *Pseudomonas aeruginosa*. *Biochimie*, 84(5):499–510.
- [Michod, 2000] Michod, R. E. (2000). *Darwinian Dynamics: Evolutionary Transitions in Fitness and Individuality*. Princeton University Press.
- [Michod and Hamilton, 1980] Michod, R. E. and Hamilton, W. D. (1980). Coefficients of relatedness in sociobiology. *Nature*, 288(5792):694–697.
- [Morrissey et al., 2010] Morrissey, M. B., Kruuk, L. E. B., and Wilson, A. J. (2010). The danger of applying the breeder’s equation in observational studies of natural populations. *Journal of Evolutionary Biology*, 23(11):2277–2288.
- [Motro, 1991] Motro, U. (1991). Co-operation and defection: playing the field and the ess. *Journal of Theoretical Biology*, 151(2):145–154.
- [Nam et al., 2010] Nam, K., Simeoni, M., Sharp, S. P., and Hatchwell, B. J. (2010). Kinship affects investment by helpers in a cooperatively breeding bird. *Proceedings of the Royal Society B: Biological Sciences*, 277(1698):3299–3306.
- [Nasar, 1998] Nasar, S. (1998). *A Beautiful Mind: A Biography of John Forbes Nash, Jr., Winner of the Nobel Prize in Economics, 1994*. Simon and Schuster.
- [Nash, 1951] Nash, J. (1951). Non-cooperative games. *Annals of Mathematics*, 54(2):286–295.
- [Nash, 1950] Nash, J. F. (1950). Equilibrium points in n-person games. *Proceedings of the National Academy of Sciences*, 36(1):48–49.
- [Nee, 1989] Nee, S. (1989). Does Hamilton’s rule describe the evolution of reciprocal altruism? *Journal of Theoretical Biology*, 141(1):81–91.
- [Nowak et al., 2010] Nowak, M. A., Tarnita, C. E., and Wilson, E. O. (2010). The evolution of eusociality. *Nature*, 466(7310):1057–1062.
- [Nowak et al., 2011] Nowak, M. A., Tarnita, C. E., and Wilson, E. O. (2011). Nowak et al. reply. *Nature*, 471:E9–E10.
- [Nunney, 1985] Nunney, L. (1985). Group selection, altruism, and structured-deme models. *American Naturalist*, 126:212–230.
- [Ohtsuki et al., 2006] Ohtsuki, H., Hauert, C., Lieberman, E., and Nowak, M. A. (2006). A simple rule for the evolution of cooperation on graphs. *Nature*, 441(7092):502.
- [Ohtsuki and Nowak, 2006] Ohtsuki, H. and Nowak, M. A. (2006). Evolutionary games on cycles. *Proceedings of the Royal Society B: Biological Sciences*, 273(1598):2249–2256.
- [Okasha, 2006] Okasha, S. (2006). *Evolution and the Levels of Selection*. Oxford University Press.
- [Okasha, 2008] Okasha, S. (2008). Fisher’s fundamental theorem of natural selection—a philosophical analysis. *British Journal for the Philosophy of Science*, 59(3):319–351.
- [Okasha, 2014] Okasha, S. (2014). The relation between kin and multi-level selection: an approach using causal graphs. *British Journal for the Philosophy of Science*. In press.
- [Okasha and Paternotte, 2012] Okasha, S. and Paternotte, C. (2012). Group adaptation, formal Darwinism and contextual analysis. *Journal of Evolutionary Biology*, 25:1127–1139.
- [Okasha and Paternotte, 2014] Okasha, S. and Paternotte, C. (2014). Adaptation, fitness and the selection-optimality links. *Biology and Philosophy*, 29:225–232.
- [Oli, 2003] Oli, M. K. (2003). Hamilton goes empirical: estimation of inclusive fitness from life-history data. *Proceedings of the Royal Society B: Biological Sciences*, 270:307–311.
- [Olson, 1965] Olson, M. (1965). *The Logic of Collective Action: Public Goods and the Theory of Groups*. Harvard University Press.

- [Osinga and Marshall, 2015] Osinga, H. and Marshall, J. A. R. (2015). Adaptive topographies and equilibrium selection in an evolutionary game. *PLoS One* (in press).
- [Paley, 1802] Paley, W. (1802). *Natural Theology: or, Evidence of the Existence and Attributes of the Deity*. Faulder, London.
- [Platt and Bever, 2009] Platt, T. G. and Bever, J. D. (2009). Kin competition and the evolution of cooperation. *Trends in Ecology and Evolution*, 24:370–377.
- [Price, 1970] Price, G. R. (1970). Selection and covariance. *Nature*, 227(5257):520–521.
- [Price, 1972a] Price, G. R. (1972a). Extension of covariance selection mathematics. *Annals of Human Genetics*, 35:485–490.
- [Price, 1972b] Price, G. R. (1972b). Fisher’s “fundamental theorem” made clear. *Annals of Human Genetics*, 36(2):129–140.
- [Queller, 1984] Queller, D. C. (1984). Kin selection and frequency dependence: A game theoretic approach. *Biological Journal of the Linnean Society*, 23(2):133–143.
- [Queller, 1985] Queller, D. C. (1985). Kinship, reciprocity and synergism in the evolution of social behaviour. *Nature*, 318(6044):366–367.
- [Queller, 1992a] Queller, D. C. (1992a). A general model for kin selection. *Evolution*, pages 376–380.
- [Queller, 1992b] Queller, D. C. (1992b). Quantitative genetics, inclusive fitness, and group selection. *American Naturalist*, 139(3):540–558.
- [Queller, 1994] Queller, D. C. (1994). Genetic relatedness in viscous populations. *Evolutionary Ecology*, 8(1):70–73.
- [Queller, 1996] Queller, D. C. (1996). The measurement and meaning of inclusive fitness. *Animal Behaviour*, 51(1):229–232.
- [Queller, 2004] Queller, D. C. (2004). Social evolution: kinship is relative. *Nature*, 430(7003):975–976.
- [Queller, 2011] Queller, D. C. (2011). Expanded social fitness and Hamilton’s rule for kin, kith, and kind. *Proceedings of the National Academy of Sciences*, 108:10792–10799.
- [Queller and Goodnight, 1989] Queller, D. C. and Goodnight, K. F. (1989). Estimating relatedness using genetic markers. *Evolution*, 43:258–275.
- [Queller and Strassmann, 2009] Queller, D. C. and Strassmann, J. E. (2009). Beyond society: the evolution of organismality. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 364(1533):3143–3155.
- [Quickfall et al., 2015] Quickfall, C. G., Foster, K. R., and Marshall, J. A. R. (2015). Problems with altruism between species. Under submission.
- [Raby, 2002] Raby, P. (2002). *Alfred Russel Wallace: A Life*. Princeton University Press.
- [Raper, 1984] Raper, K. B. (1984). *The Dictyostelids*. Princeton University Press, Princeton.
- [Rapoport, 1967] Rapoport, A. (1967). Exploiter, hero, leader and martyr: the four archetypes of the 2 × 2 game. *Behavioural Science*, 12:81–84.
- [Rapoport and Guyer, 1966] Rapoport, A. and Guyer, M. (1966). A taxonomy of 2 × 2 games. *General Systems*, 11:203–214.
- [Ratnieks, 1988] Ratnieks, F. L. W. (1988). Reproductive harmony via mutual policing by workers in eusocial Hymenoptera. *American Naturalist*, 132:217–236.
- [Ratnieks et al., 2010] Ratnieks, F. L. W., Foster, K. R., and Wenseleers, T. (2010). Darwin’s special difficulty: the evolution of “neuter” insects and current theory. *Behavioral Ecology and Sociobiology*.
- [Ratnieks and Visscher, 1989] Ratnieks, F. L. W. and Visscher, P. K. (1989). Worker policing in the honeybee. *Nature*, 342(6251):796–797.
- [Riley and Wertz, 2002] Riley, M. A. and Wertz, J. E. (2002). Bacteriocins: evolution, ecology, and application. *Annual Reviews in Microbiology*, 56(1):117–137.
- [Robertson, 1966] Robertson, A. (1966). A mathematical model of the culling process in dairy cattle. *Animal Production*, 8(95):95–108.
- [Robertson, 1968] Robertson, A. (1968). The spectrum of genetic variation. In Lewontin, R. C., editor, *Population Biology and Evolution*, pages 5–16. Syracuse University Press.

- [Ross et al., 2013] Ross, L., Gardner, A., Hardy, N., and West, S. A. (2013). Ecology, not the genetics of sex determination, determines who helps in eusocial populations. *Current Biology*, 23: 2383–2387.
- [Rousset, 2004] Rousset, F. (2004). *Genetic Structure and Selection in Subdivided Populations*. Princeton University Press.
- [Rousset and Lion, 2011] Rousset, F. and Lion, S. (2011). Much ado about nothing: Nowak *et al.*'s charge against inclusive fitness theory. *Journal of Evolutionary Biology*, 24(6):1386–1392.
- [Rousset and Roze, 2007] Rousset, F. and Roze, D. (2007). Constraints on the origin and maintenance of genetic kin recognition. *Evolution*, 61(10):2320–2330.
- [Russell and Hatchwell, 2001] Russell, A. F. and Hatchwell, B. J. (2001). Experimental evidence for kin-biased helping in a cooperatively breeding vertebrate. *Proceedings of the Royal Society B: Biological Sciences*, 268:2169–2174.
- [Samuelson, 1998] Samuelson, L. (1998). *Evolutionary Games and Equilibrium Selection*. MIT Press.
- [Samuelson, 1954] Samuelson, P. A. (1954). The pure theory of public expenditure. *Review of Economics and Statistics*, 36(4):387–389.
- [Santos et al., 2003] Santos, J. C., Coloma, L. A., and Cannatella, D. C. (2003). Multiple, recurring origins of aposematism and diet specialization in poison frogs. *Proceedings of the National Academy of Sciences*, 100(22):12792–12797.
- [Schwartz, 2000] Schwartz, J. (2000). Death of an altruist. *Lingua Franca: The Review of Academic Life*, 10(5):51–61.
- [Seeley, 1985] Seeley, T. D. (1985). *Honeybee Ecology: A Study of Adaptation in Social Life*. Princeton University Press.
- [Seger, 1981] Seger, J. (1981). Kinship and covariance. *Journal of Theoretical Biology*, 91(1):191–213.
- [Segerstrale, 2013] Segerstrale, U. (2013). *Nature's Oracle: The Life and Work of W. D. Hamilton*. Oxford University Press.
- [Shipley, 2002] Shipley, B. (2002). *Cause and Correlation in Biology: A User's Guide to Path Analysis, Structural Equations and Causal Inference*. Cambridge University Press.
- [Simon, 1956] Simon, H. A. (1956). Rational choice and the structure of the environment. *Psychological Review*, 63(2):129–138.
- [Skyrms, 2004] Skyrms, B. (2004). *The Stag Hunt and the Evolution of Social Structure*. Cambridge University Press.
- [Smith et al., 2010] Smith, J., van Dyken, J. D., and Zee, C. (2010). A generalization of Hamilton's rule for the evolution of microbial cooperation. *Science*, 328:1700–1703.
- [Smukalla et al., 2008] Smukalla, S., Caldara, M., Pochet, N., Beauvais, A., Guadagnini, S., Yan, C., Vinces, M. D., et al. (2008). *FLO1* is a variable green beard gene that drives biofilm-like cooperation in budding yeast. *Cell*, 135(4):726–737.
- [Speed, 2001] Speed, M. P. (2001). Can receiver psychology explain the evolution of aposematism? *Animal Behaviour*, 61(1):205–216.
- [Spencer, 1864] Spencer, H. (1864). *The Principles of Biology*, volume 1. Williams and Norgate.
- [Strassman et al., 2011] Strassman, J. E., Page, R. E., Robinson, G. E., and Seeley, T. D. (2011). Kin selection and eusociality. *Nature*, 471:E5–E6.
- [Strassmann et al., 2000] Strassmann, J. E., Zhu, Y., and Queller, D. C. (2000). Altruism and social cheating in the social amoeba *Dictyostelium discoideum*. *Nature*, 408(6815):965–967.
- [Sugden, 1986] Sugden, R. (1986). *The Economics of Rights, Co-operation and Welfare*. Blackwell, Oxford.
- [Taborsky, 2013] Taborsky, M. (2013). Social evolution: reciprocity there is. *Current Biology*, 23(11):R486–R488.
- [Taylor, 1990] Taylor, P. D. (1990). Allele-frequency change in a class-structured population. *American Naturalist*, pages 95–106.
- [Taylor, 1992a] Taylor, P. D. (1992a). Altruism in viscous populations—an inclusive fitness model. *Evolutionary Ecology*, 6(4):352–356.

- [Taylor, 1992b] Taylor, P. D. (1992b). Inclusive fitness in a homogeneous environment. *Proceedings of the Royal Society B: Biological Sciences*, 249(1326):299–302.
- [Taylor et al., 2007a] Taylor, P. D., Day, T., and Wild, G. (2007a). Evolution of cooperation in a finite homogeneous graph. *Nature*, 447(7143):469–472.
- [Taylor and Frank, 1996] Taylor, P. D. and Frank, S. A. (1996). How to make a kin selection model. *Journal of Theoretical Biology*, 180(1):27–37.
- [Taylor and Jonker, 1978] Taylor, P. D. and Jonker, L. B. (1978). Evolutionary stable strategies and game dynamics. *Mathematical Biosciences*, 40(1):145–156.
- [Taylor et al., 2007b] Taylor, P. D., Wild, G., and Gardner, A. (2007b). Direct fitness or inclusive fitness: how shall we model kin selection? *Journal of Evolutionary Biology*, 20(1):301–309.
- [Tinbergen, 1963] Tinbergen, N. (1963). On aims and methods of ethology. *Zeitschrift für Tierpsychologie*, 20(4):410–433.
- [Traulsen, 2010] Traulsen, A. (2010). Mathematics of kin- and group-selection: formally equivalent? *Evolution*, 64(2):316–323.
- [Trivers, 1971] Trivers, R. L. (1971). The evolution of reciprocal altruism. *Quarterly Review of Biology*, 46:35–57.
- [Trivers and Hare, 1976] Trivers, R. L. and Hare, H. (1976). Haplodiploidy and the evolution of the social insects. *Science*, 191(4224):249–263.
- [Tucker, 1950] Tucker, A. W. (1950). A two-person dilemma. In *Readings in Games and Information*, pages 7–8. Blackwell, Oxford.
- [van Cleeve and Aćkay, 2014] van Cleeve, J. and Aćkay, E. (2014). Pathways to social evolution: reciprocity, relatedness and synergy. *Evolution*, 68:2245–2258.
- [van Veelen, 2005] van Veelen, M. (2005). On the use of the Price equation. *Journal of Theoretical Biology*, 237(4):412–426.
- [van Veelen, 2009] van Veelen, M. (2009). Group selection, kin selection, altruism and cooperation: when inclusive fitness is right and when it can be wrong. *Journal of Theoretical Biology*, 259:589–600.
- [van Veelen et al., 2012] van Veelen, M., García, J., Sabelis, M. W., and Egas, M. (2012). Group selection and inclusive fitness are not equivalent; the Price equation vs. models and statistics. *Journal of Theoretical Biology*, 299:64–80.
- [Von Neumann and Morgenstern, 1944] Von Neumann, J. and Morgenstern, O. (1944). *Theory of Games and Economic Behavior*. Princeton University Press.
- [Wade, 1985] Wade, M. J. (1985). Soft selection, hard selection, kin selection, and group selection. *American Naturalist*, 125(1):61–73.
- [Weibull, 1995] Weibull, J. W. (1995). *Evolutionary Game Theory*. MIT Press.
- [Weismann, 1903] Weismann, A. (1903). *The Evolution Theory*. Edward Arnold, London.
- [Weiss, 2006] Weiss, N. A. (2006). *A Course in Probability*. Pearson Addison Wesley.
- [Wenseleers and Ratnieks, 2006a] Wenseleers, T. and Ratnieks, F. L. W. (2006a). Comparative analysis of worker reproduction and policing in eusocial Hymenoptera supports relatedness theory. *American Naturalist*, 168:E163–E179.
- [Wenseleers and Ratnieks, 2006b] Wenseleers, T. and Ratnieks, F. L. W. (2006b). Enforced altruism in insect societies. *Nature*, 444(7115):50.
- [West, 2009] West, S. A. (2009). *Sex Allocation*. Princeton University Press.
- [West et al., 2007a] West, S. A., Diggle, S. P., Buckling, A., Gardner, A., and Griffin, A. S. (2007a). The social lives of microbes. *Annual Review of Ecology, Evolution and Systematics*, 38:53–77.
- [West and Gardner, 2010] West, S. A. and Gardner, A. (2010). Altruism, spite, and greenbeards. *Science*, 327(5971):1341–1344.
- [West et al., 2007b] West, S. A., Griffin, A. S., and Gardner, A. (2007b). Social semantics: altruism, cooperation, mutualism, strong reciprocity and group selection. *Journal of Evolutionary Biology*, 20(2):415–432.

- [West et al., 2001] West, S. A., Murray, M. G., Machado, C. A., Griffin, A. S., and Herre, E. A. (2001). Testing Hamilton's rule with competition between relatives. *Nature*, 409(6819):510–513.
- [Williams, 1957] Williams, G. C. (1957). Pleiotropy, natural selection, and the evolution of senescence. *Evolution*, 11(4):398–411.
- [Williams, 1966] Williams, G. C. (1966). *Adaptation and Natural Selection*. Princeton University Press.
- [Williams, 1992] Williams, G. C. (1992). *Natural Selection: Domains, Levels and Challenges*. Oxford University Press.
- [Williams and Williams, 1957] Williams, G. C. and Williams, D. C. (1957). Natural selection of individually harmful social adaptations among sibs with special reference to social insects. *Evolution*, 11:32–39.
- [Wilson, 1975a] Wilson, D. S. (1975a). A theory of group selection. *Proceedings of the National Academy of Sciences*, 72(1):143–146.
- [Wilson, 1979] Wilson, D. S. (1979). Structured demes and trait-group variation. *American Naturalist*, 113(4):606–610.
- [Wilson et al., 1992] Wilson, D. S., Pollock, G. B., and Dugatkin, L. A. (1992). Can altruism evolve in purely viscous populations? *Evolutionary Ecology*, 6(4):331–341.
- [Wilson, 1975b] Wilson, E. O. (1975b). *Sociobiology: The New Synthesis*. Belknap Press.
- [Wilson, 1980] Wilson, E. O. (1980). Caste and division of labor in leaf-cutter ants (Hymenoptera: Formicidae: *Atta*). *Behavioral Ecology and Sociobiology*, 7(2):157–165.
- [Wilson and Hölldobler, 2005] Wilson, E. O. and Hölldobler, B. (2005). Eusociality: origin and consequences. *Proceedings of the National Academy of Sciences of the United States of America*, 102(38):13367–13371.
- [Wilson and Nowak, 2014] Wilson, E. O. and Nowak, M. A. (2014). Natural selection drives the evolution of ant life cycles. *Proceedings of the National Academy of Sciences*, 111:12585–12590.
- [Wright, 1921a] Wright, S. (1921a). Correlation and causation. *Journal of Agricultural Research*, 20(7):557–585.
- [Wright, 1921b] Wright, S. (1921b). Systems of mating. I. The biometric relations between parent and offspring. *Genetics*, 6(2):111–123.
- [Wright, 1922] Wright, S. (1922). Coefficients of inbreeding and relationship. *American Naturalist*, 56(645):330–338.
- [Wright, 1932] Wright, S. (1932). The roles of mutation, inbreeding, crossbreeding and selection in evolution. In *Proceedings of the Sixth International Congress of Genetics*, volume 1, pages 356–366.
- [Wright, 1969] Wright, S. (1969). *Evolution and the Genetics of Populations. Volume 2*. University of Chicago Press, Chicago.
- [Wyatt et al., 2013] Wyatt, G. A. K., West, S. A., and Gardner, A. (2013). Can natural selection favour altruism between species? *Journal of Evolutionary Biology*, 26(9):1854–1865.
- [Wynne-Edwards, 1962] Wynne-Edwards, V. C. (1962). *Animal Dispersion in Relation to Social Behaviour*. Oliver and Boyd, Edinburgh.
- [Yeh and Gardner, 2012] Yeh, A. Y. and Gardner, A. (2012). A general ploidy model for the evolution of helping in viscous populations. *Journal of Theoretical Biology*, 304:297–303.
- [Zanette et al., 2012] Zanette, L. R. S., Miller, S. D. L., Faria, C., Almond, E. J., Huggins, T. J., Jordan, W. C., and Bourke, A. F. G. (2012). Reproductive conflict in bumblebees and the evolution of worker policing. *Evolution*, 66:3765–3777.