

# Karl Sigmund

## List of Publications by Year in descending order

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98  
papers

21,834  
citations

50170

46  
h-index

38300

95  
g-index

116  
all docs

116  
docs citations

116  
times ranked

7753  
citing authors

#	ARTICLE	IF	CITATIONS
1	Evolution of indirect reciprocity. <i>Nature</i> , 2005, 437, 1291-1298.	13.7	2,220
2	Evolution of indirect reciprocity by image scoring. <i>Nature</i> , 1998, 393, 573-577.	13.7	2,098
3	A strategy of win-stay, lose-shift that outperforms tit-for-tat in the Prisoner's Dilemma game. <i>Nature</i> , 1993, 364, 56-58.	13.7	1,593
4	Volunteering as Red Queen Mechanism for Cooperation in Public Goods Games. <i>Science</i> , 2002, 296, 1129-1132.	6.0	949
5	Evolutionary Dynamics of Biological Games. <i>Science</i> , 2004, 303, 793-799.	6.0	912
6	Tit for tat in heterogeneous populations. <i>Nature</i> , 1992, 355, 250-253.	13.7	908
7	Evolutionary game dynamics. <i>Bulletin of the American Mathematical Society</i> , 2003, 40, 479-520.	0.8	902
8	Fairness Versus Reason in the Ultimatum Game. <i>Science</i> , 2000, 289, 1773-1775.	6.0	762
9	Via Freedom to Coercion: The Emergence of Costly Punishment. <i>Science</i> , 2007, 316, 1905-1907.	6.0	628
10	Replicator dynamics. <i>Journal of Theoretical Biology</i> , 1983, 100, 533-538.	0.8	538
11	The Dynamics of Indirect Reciprocity. <i>Journal of Theoretical Biology</i> , 1998, 194, 561-574.	0.8	458
12	The Calculus of Selfishness. , 2010, , .		452
13	Social learning promotes institutions for governing the commons. <i>Nature</i> , 2010, 466, 861-863.	13.7	434
14	Punishment and reputation in spatial public goods games. <i>Proceedings of the Royal Society B: Biological Sciences</i> , 2003, 270, 1099-1104.	1.2	330
15	Punish or perish? Retaliation and collaboration among humans. <i>Trends in Ecology and Evolution</i> , 2007, 22, 593-600.	4.2	314
16	Replicator Dynamics for Optional Public Good Games. <i>Journal of Theoretical Biology</i> , 2002, 218, 187-194.	0.8	287
17	Exploration dynamics in evolutionary games. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009, 106, 709-712.	3.3	258
18	The evolution of stochastic strategies in the Prisoner's Dilemma. <i>Acta Applicandae Mathematicae</i> , 1990, 20, 247-265.	0.5	232

#	ARTICLE	IF	CITATIONS
19	Evolution of extortion in Iterated Prisoner's Dilemma games. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 6913-6918.	3.3	224
20	The Arithmetics of Mutual Help. Scientific American, 1995, 272, 76-81.	1.0	207
21	Incentives and opportunism: from the carrot to the stick. Proceedings of the Royal Society B: Biological Sciences, 2010, 277, 2427-2433.	1.2	188
22	The Alternating Prisoner's Dilemma. Journal of Theoretical Biology, 1994, 168, 219-226.	0.8	175
23	The logic of reprobation: assessment and action rules for indirect reciprocity. Journal of Theoretical Biology, 2004, 231, 475-486.	0.8	173
24	Punishing and abstaining for public goods. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 495-497.	3.3	168
25	Indirect reciprocity, image scoring, and moral hazard. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 2666-2670.	3.3	145
26	The spatial ultimatum game. Proceedings of the Royal Society B: Biological Sciences, 2000, 267, 2177-2182.	1.2	144
27	Evolutionary game theory. Current Biology, 1999, 9, R503-R505.	1.8	136
28	Generic properties of invariant measures for Axiom A-diffeomorphisms. Inventiones Mathematicae, 1970, 11, 99-109.	1.3	130
29	On dynamical systems with the specification property. Transactions of the American Mathematical Society, 1974, 190, 285-299.	0.5	124
30	Oscillations in the evolution of reciprocity. Journal of Theoretical Biology, 1989, 137, 21-26.	0.8	123
31	The take-it-or-leave-it option allows small penalties to overcome social dilemmas. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 1165-1169.	3.3	117
32	Coyness, philandering and stable strategies. Animal Behaviour, 1981, 29, 186-192.	0.8	113
33	The good, the bad and the discriminator's Errors in direct and indirect reciprocity. Journal of Theoretical Biology, 2006, 239, 183-194.	0.8	108
34	Topological dynamics of transformations induced on the space of probability measures. Monatshefte Fur Mathematik, 1975, 79, 81-92.	0.5	95
35	Partners or rivals? Strategies for the iterated prisoner's dilemma. Games and Economic Behavior, 2015, 92, 41-52.	0.4	93
36	Moral assessment in indirect reciprocity. Journal of Theoretical Biology, 2012, 299, 25-30.	0.8	89

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37	Automata, repeated games and noise. <i>Journal of Mathematical Biology</i> , 1995, 33, 703.	0.8	76
38	The competition of assessment rules for indirect reciprocity. <i>Journal of Theoretical Biology</i> , 2010, 263, 13-19.	0.8	67
39	The Logic of Contrition. <i>Journal of Theoretical Biology</i> , 1997, 185, 281-293.	0.8	65
40	Public Goods With Punishment and Abstaining in Finite and Infinite Populations. <i>Biological Theory</i> , 2008, 3, 114-122.	0.8	63
41	Selfregulation of behaviour in animal societies. <i>Biological Cybernetics</i> , 1981, 40, 1-8.	0.6	60
42	Immune responses against multiple epitopes. <i>Journal of Theoretical Biology</i> , 1995, 175, 325-353.	0.8	60
43	Game-dynamical aspects of the prisoner's dilemma. <i>Applied Mathematics and Computation</i> , 1989, 30, 191-213.	1.4	56
44	Tides of tolerance. <i>Nature</i> , 2001, 414, 403-405.	13.7	53
45	Dynamics of Evolutionary Optimization. <i>Zeitschrift Fur Elektrotechnik Und Elektrochemie</i> , 1985, 89, 668-682.	0.9	50
46	Games of corruption: How to suppress illegal logging. <i>Journal of Theoretical Biology</i> , 2015, 367, 1-13.	0.8	48
47	Selfregulation of behaviour in animal societies. <i>Biological Cybernetics</i> , 1981, 40, 17-25.	0.6	41
48	Sympathy and similarity: The evolutionary dynamics of cooperation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2009, 106, 8405-8406.	3.3	41
49	Selfregulation of behaviour in animal societies. <i>Biological Cybernetics</i> , 1981, 40, 9-15.	0.6	40
50	Mass action kinetics of selfreplication in flow reactors. <i>Journal of Mathematical Analysis and Applications</i> , 1980, 78, 88-112.	0.5	39
51	Phage-lift for game theory. <i>Nature</i> , 1999, 398, 367-368.	13.7	39
52	On the Space of Invariant Measures for Hyperbolic Flows. <i>American Journal of Mathematics</i> , 1972, 94, 31.	0.5	37
53	On the dynamics of asymmetric games. <i>Theoretical Population Biology</i> , 1991, 39, 345-357.	0.5	37
54	Social evolution leads to persistent corruption. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 13276-13281.	3.3	34

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55	Game dynamics in mendelian populations. <i>Biological Cybernetics</i> , 1982, 43, 51-57.	0.6	32
56	Social Control and the Social Contract: The Emergence of Sanctioning Systems for Collective Action. <i>Dynamic Games and Applications</i> , 2011, 1, 149-171.	1.1	32
57	Equal Pay for All Prisoners. <i>American Mathematical Monthly</i> , 1997, 104, 303-305.	0.2	31
58	Freedom, enforcement, and the social dilemma of strong altruism. <i>Journal of Evolutionary Economics</i> , 2010, 20, 203-217.	0.8	31
59	The dynamics of public goods. <i>Discrete and Continuous Dynamical Systems - Series B</i> , 2004, 4, 575-587.	0.5	31
60	The role of mendelian genetics in strategic models on animal behaviour. <i>Journal of Theoretical Biology</i> , 1983, 101, 19-38.	0.8	30
61	Game dynamics, mixed strategies, and gradient systems. <i>Theoretical Population Biology</i> , 1987, 32, 114-126.	0.5	25
62	Cooperation versus Competition. <i>Financial Analysts Journal</i> , 2000, 56, 13-22.	1.2	25
63	Time averages for unpredictable orbits of deterministic systems. <i>Annals of Operations Research</i> , 1992, 37, 217-228.	2.6	24
64	The evolution of sanctioning institutions: an experimental approach to the social contract. <i>Experimental Economics</i> , 2014, 17, 285.	1.0	21
65	A note on the evolution of sexual dimorphism. <i>Journal of Theoretical Biology</i> , 1982, 94, 107-110.	0.8	20
66	Invasion Dynamics of the Finitely Repeated Prisoner's Dilemma. <i>Games and Economic Behavior</i> , 1995, 11, 364-390.	0.4	19
67	Equal Pay for All Prisoners. <i>American Mathematical Monthly</i> , 1997, 104, 303.	0.2	18
68	A Survey of Replicator Equations. <i>Biomathematics</i> , 1986, , 88-104.	0.7	15
69	On mixing measures for axiom A diffeomorphisms. <i>Proceedings of the American Mathematical Society</i> , 1972, 36, 497-497.	0.4	14
70	A maximum principle for frequency dependent selection. <i>Mathematical Biosciences</i> , 1987, 84, 189-195.	0.9	14
71	On prisoners and cells. <i>Nature</i> , 1992, 359, 774-774.	13.7	13
72	Altruism. <i>Current Biology</i> , 2002, 12, R270-R272.	1.8	13

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73	A philosopher's mathematician: hans hahn and the vienna circle. <i>Mathematical Intelligencer</i> , 1995, 17, 16-29.	0.1	12
74	A Survey of Indirect Reciprocity. , 2007, , 21-49.		12
75	On minimal centers of attraction and generic points.. <i>Journal Fur Die Reine Und Angewandte Mathematik</i> , 1977, 1977, 72-79.	0.4	10
76	What is life? The next fifty years. <i>Complexity</i> , 1996, 2, 43-44.	0.9	10
77	Complex Adaptive Systems and the Evolution of Reciprocation. <i>Ecosystems</i> , 1998, 1, 444-448.	1.6	10
78	Exact thought in a demented time: Karl menger and his viennese mathematical colloquium. <i>Mathematical Intelligencer</i> , 2000, 22, 34-45.	0.1	10
79	Kepler's conjecture: How some of the greatest minds in history helped solve one of the oldest math problems in the world. <i>Mathematical Intelligencer</i> , 2004, 26, 66-67.	0.1	10
80	On the connectedness of ergodic systems. <i>Manuscripta Mathematica</i> , 1977, 22, 27-32.	0.3	9
81	Cantor's Vienna. <i>Mathematical Intelligencer</i> , 2006, 28, 44-55.	0.1	9
82	On the prevalence of zero entropy. <i>Israel Journal of Mathematics</i> , 1971, 10, 281-288.	0.4	8
83	Toward ecoevolutionary dynamics. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	3.3	8
84	Normal and quasiregular points for automorphisms of the torus. <i>Mathematical Systems Theory</i> , 1974, 8, 251-255.	0.5	6
85	On the time evolution of statistical states for Anosov systems. <i>Mathematische Zeitschrift</i> , 1974, 138, 183-189.	0.4	5
86	Gradients for the evolution of bimatrix games. <i>Journal of Mathematical Biology</i> , 1987, 25, 623-635.	0.8	5
87	Permanence and viability. <i>Journal of Computational and Applied Mathematics</i> , 1988, 22, 203-209.	1.1	5
88	Merging lines and emerging levels. <i>Nature</i> , 1998, 392, 439-441.	13.7	5
89	Public Good Games with Incentives: The Role of Reputation. <i>Springer Series in Game Theory</i> , 2009, , 85-103.	0.2	3
90	Cooperation in Heterogeneous Populations. <i>Recent Research in Psychology</i> , 1994, , 223-235.	0.5	2

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91	Games Evolution Plays. , 1996, , 65-76.		1
92	“Was you ever bit by a dead bee?” Evolutionary games and dominated strategies. Behavioral and Brain Sciences, 2003, 26, .	0.4	1
93	A short tale of two cities: Otto schreier and the Hamburg” Vienna connection. Mathematical Intelligencer, 2008, 30, 27-35.	0.1	1
94	Complex adaptive systems and the evolution of reciprocation. AIP Conference Proceedings, 2001, , .	0.3	0
95	Three's company when seeking unanimity. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 17885-17886.	3.3	0
96	Automata for Repeated Games. , 2001, , 335-347.		0
97	Automata and Inner States for Repeated Games. , 1998, , 131-139.		0
98	Evolution theory system theory game theory Biocentric Modeling. , 2007, , 368-417.		0