Peter D Dayan

List of Publications by Citations

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The third column is the impact factor (IF) of the journal, and the fourth column is the number of citations of the article.

259 papers	36,024 citations	80 h-index	189 g-index
302 ext. papers	44,041 ext. citations	8.4 avg, IF	7.71 L-index

#	Paper	IF	Citations
259	Q-learning. *Machine Learning*, **1992**, 8, 279-292	4	5136
258	Uncertainty-based competition between prefrontal and dorsolateral striatal systems for behavioral control. *Nature Neuroscience*, **2005**, 8, 1704-11	25.5	1688
257	Dissociable roles of ventral and dorsal striatum in instrumental conditioning. *Science*, **2004**, 304, 452-4	33.3	1671
256	Technical Note: Q-Learning. *Machine Learning*, **1992**, 8, 279-292	4	1498
255	Cortical substrates for exploratory decisions in humans. *Nature*, **2006**, 441, 876-9	50.4	1390
254	Temporal difference models and reward-related learning in the human brain. *Neuron*, **2003**, 38, 329-37	13.9	1139
253	Uncertainty, neuromodulation, and attention. *Neuron*, **2005**, 46, 681-92	13.9	1132
252	Model-based influences on humans' choices and striatal prediction errors. *Neuron*, **2011**, 69, 1204-15	13.9	1004
251	The Helmholtz machine. *Neural Computation*, **1995**, 7, 889-904	2.9	789
250	Tonic dopamine: opportunity costs and the control of response vigor. *Psychopharmacology*, **2007**, 191, 507-20	4.7	765
249	States versus rewards: dissociable neural prediction error signals underlying model-based and model-free reinforcement learning. *Neuron*, **2010**, 66, 585-95	13.9	725
248	Opponent interactions between serotonin and dopamine. *Neural Networks*, **2002**, 15, 603-16	9.1	646
247	Reward, motivation, and reinforcement learning. *Neuron*, **2002**, 36, 285-98	13.9	626
246	Reinforcement learning: the good, the bad and the ugly. *Current Opinion in Neurobiology*, **2008**, 18, 185-96	7.6	592
245	The effect of correlated variability on the accuracy of a population code. *Neural Computation*, **1999**, 11, 91-101	2.9	590
244	Goals and habits in the brain. *Neuron*, **2013**, 80, 312-25	13.9	577
243	Temporal difference models describe higher-order learning in humans. *Nature*, **2004**, 429, 664-7	50.4	488

242	Information processing with population codes. *Nature Reviews Neuroscience*, **2000**, 1, 125-32	13.5	482
241	Computational psychiatry. *Trends in Cognitive Sciences*, **2012**, 16, 72-80	14	470
240	A mathematical model explains saturating axon guidance responses to molecular gradients. *ELife*, **2016**, 5, e12248	8.9	370
239	Inference and computation with population codes. *Annual Review of Neuroscience*, **2003**, 26, 381-410	17	363
238	Differential encoding of losses and gains in the human striatum. *Journal of Neuroscience*, **2007**, 27, 4826-31	6.6	356
237	Learning and selective attention. *Nature Neuroscience*, **2000**, 3 Suppl, 1218-23	25.5	335
236	Decision theory, reinforcement learning, and the brain. *Cognitive, Affective and Behavioral Neuroscience*, **2008**, 8, 429-53	3.5	325
235	Opponency revisited: competition and cooperation between dopamine and serotonin. *Neuropsychopharmacology*, **2011**, 36, 74-97	8.7	318
234	Dopamine: generalization and bonuses. *Neural Networks*, **2002**, 15, 549-59	9.1	312
233	Probabilistic interpretation of population codes. *Neural Computation*, **1998**, 10, 403-30	2.9	272
232	Space and time in visual context. *Nature Reviews Neuroscience*, **2007**, 8, 522-35	13.5	266
231	The misbehavior of value and the discipline of the will. *Neural Networks*, **2006**, 19, 1153-60	9.1	257
230	Serotonin in affective control. *Annual Review of Neuroscience*, **2009**, 32, 95-126	17	245
229	Improving Generalization for Temporal Difference Learning: The Successor Representation. *Neural Computation*, **1993**, 5, 613-624	2.9	245
228	Mapping anhedonia onto reinforcement learning: a behavioural meta-analysis. *Biology of Mood & Anxiety Disorders*, **2013**, 3, 12		243
227	Bee foraging in uncertain environments using predictive hebbian learning. *Nature*, **1995**, 377, 725-8	50.4	240
226	Go and no-go learning in reward and punishment: interactions between affect and effect. *NeuroImage*, **2012**, 62, 154-66	7.9	237
225	A normative perspective on motivation. *Trends in Cognitive Sciences*, **2006**, 10, 375-81	14	234

224	Human pavlovian-instrumental transfer. *Journal of Neuroscience*, **2008**, 28, 360-8	6.6	225
223	Bonsai trees in your head: how the pavlovian system sculpts goal-directed choices by pruning decision trees. *PLoS Computational Biology*, **2012**, 8, e1002410	5	217
222	Mapping value based planning and extensively trained choice in the human brain. *Nature Neuroscience*, **2012**, 15, 786-91	25.5	214
221	Disentangling the roles of approach, activation and valence in instrumental and pavlovian responding. *PLoS Computational Biology*, **2011**, 7, e1002028	5	214
220	A computational and neural model of momentary subjective well-being. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 12252-7	11.5	204
219	Model-based and model-free Pavlovian reward learning: revaluation, revision, and revelation. *Cognitive, Affective and Behavioral Neuroscience*, **2014**, 14, 473-92	3.5	203
218	Neural prediction errors reveal a risk-sensitive reinforcement-learning process in the human brain. *Journal of Neuroscience*, **2012**, 32, 551-62	6.6	191
217	Phasic norepinephrine: a neural interrupt signal for unexpected events. *Network: Computation in Neural Systems*, **2006**, 17, 335-50	0.7	182
216	Dopamine restores reward prediction errors in old age. *Nature Neuroscience*, **2013**, 16, 648-53	25.5	173
215	Acetylcholine in cortical inference. *Neural Networks*, **2002**, 15, 719-30	9.1	173
214	A model of hippocampally dependent navigation, using the temporal difference learning rule. *Hippocampus*, **2000**, 10, 1-16	3.5	173
213	Action dominates valence in anticipatory representations in the human striatum and dopaminergic midbrain. *Journal of Neuroscience*, **2011**, 31, 7867-75	6.6	171
212	Serotonin, inhibition, and negative mood. *PLoS Computational Biology*, **2008**, 4, e4	5	166
211	Harm to others outweighs harm to self in moral decision making. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 17320-5	11.5	161
210	Serotonin selectively modulates reward value in human decision-making. *Journal of Neuroscience*, **2012**, 32, 5833-42	6.6	161
209	Action versus valence in decision making. *Trends in Cognitive Sciences*, **2014**, 18, 194-202	14	160
208	Optimal Plasticity from Matrix Memories: What Goes Up Must Come Down. *Neural Computation*, **1990**, 2, 85-93	2.9	153
207	Dopamine modulation in the basal ganglia locks the gate to working memory. *Journal of Computational Neuroscience*, **2006**, 20, 153-66	1.4	152

206	How humans integrate the prospects of pain and reward during choice. *Journal of Neuroscience*, **2009**, 29, 14617-26	6.6	147
205	Dopamine modulates reward-related vigor. *Neuropsychopharmacology*, **2013**, 38, 1495-503	8.7	143
204	The convergence of TD() for general *Machine Learning*, **1992**, 8, 341-362	4	125
203	Off-line replay maintains declarative memories in a model of hippocampal-neocortical interactions. *Nature Neuroscience*, **2004**, 7, 286-94	25.5	123
202	Effort and valuation in the brain: the effects of anticipation and execution. *Journal of Neuroscience*, **2013**, 33, 6160-9	6.6	120
201	Bayesian model predicts the response of axons to molecular gradients. *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 10296-301	11.5	116
200	Dopamine and performance in a reinforcement learning task: evidence from Parkinson's disease. *Brain*, **2012**, 135, 1871-83	11.2	115
199	Dopaminergic Modulation of Decision Making and Subjective Well-Being. *Journal of Neuroscience*, **2015**, 35, 9811-22	6.6	113
198	Twenty-five lessons from computational neuromodulation. *Neuron*, **2012**, 76, 240-56	13.9	109
197	Charting the landscape of priority problems in psychiatry, part 1: classification and diagnosis. *Lancet Psychiatry,the*, **2016**, 3, 77-83	23.3	107
196	The algorithmic anatomy of model-based evaluation. *Philosophical Transactions of the Royal Society B: Biological Sciences*, **2014**, 369,	5.8	103
195	Depression: a decision-theoretic analysis. *Annual Review of Neuroscience*, **2015**, 38, 1-23	17	102
194	The involvement of recurrent connections in area CA3 in establishing the properties of place fields: a model. *Journal of Neuroscience*, **2000**, 20, 7463-77	6.6	100
193	Matching storage and recall: hippocampal spike timing-dependent plasticity and phase response curves. *Nature Neuroscience*, **2005**, 8, 1677-83	25.5	98
192	Acquisition and extinction in autoshaping. *Psychological Review*, **2002**, 109, 533-44	6.3	98
191	Adaptive integration of habits into depth-limited planning defines a habitual-goal-directed spectrum. *Proceedings of the National Academy of Sciences of the United States of America*, **2016**, 113, 12868-12873	11.5	96
190	Association of Neural and Emotional Impacts of Reward Prediction Errors With Major Depression. *JAMA Psychiatry*, **2017**, 74, 790-797	14.5	93
189	The habenula encodes negative motivational value associated with primary punishment in humans. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 11858-63	11.5	93

188	A Bayesian formulation of behavioral control. *Cognition*, **2009**, 113, 314-328	3.5	93
187	Dissociable Effects of Serotonin and Dopamine on the Valuation of Harm in Moral Decision Making. *Current Biology*, **2015**, 25, 1852-9	6.3	92
186	Interplay of approximate planning strategies. *Proceedings of the National Academy of Sciences of the United States of America*, **2015**, 112, 3098-103	11.5	92
185	Dopamine, uncertainty and TD learning. *Behavioral and Brain Functions*, **2005**, 1, 6	4.1	92
184	Action controls dopaminergic enhancement of reward representations. *Proceedings of the National Academy of Sciences of the United States of America*, **2012**, 109, 7511-6	11.5	86
183	Adaptation across the cortical hierarchy: low-level curve adaptation affects high-level facial-expression judgments. *Journal of Neuroscience*, **2008**, 28, 3374-83	6.6	86
182	Fast Sequences of Non-spatial State Representations in Humans. *Neuron*, **2016**, 91, 194-204	13.9	83
181	Bayesian modelling of Jumping-to-Conclusions bias in delusional patients. *Cognitive Neuropsychiatry*, **2011**, 16, 422-47	2	80
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179	Foraging for foundations in decision neuroscience: insights from ethology. *Nature Reviews Neuroscience*, **2018**, 19, 419-427	13.5	75
178	Flexible shaping: how learning in small steps helps. *Cognition*, **2009**, 110, 380-94	3.5	74
177	Nonpolitical images evoke neural predictors of political ideology. *Current Biology*, **2014**, 24, 2693-9	6.3	73
176	Dynamics of attentional selection under conflict: toward a rational Bayesian account. *Journal of Experimental Psychology: Human Perception and Performance*, **2009**, 35, 700-17	2.6	73
175	Moral transgressions corrupt neural representations of value. *Nature Neuroscience*, **2017**, 20, 879-885	25.5	68
174	Computations Underlying Social Hierarchy Learning: Distinct Neural Mechanisms for Updating and Representing Self-Relevant Information. *Neuron*, **2016**, 92, 1135-1147	13.9	68
173	Algorithms for survival: a comparative perspective on emotions. *Nature Reviews Neuroscience*, **2017**, 18, 311-319	13.5	66
172	How to set the switches on this thing. *Current Opinion in Neurobiology*, **2012**, 22, 1068-74	7.6	65
171	Differential, but not opponent, effects of L -DOPA and citalopram on action learning with reward and punishment. *Psychopharmacology*, **2014**, 231, 955-66	4.7	63

170	Vigor in the face of fluctuating rates of reward: an experimental examination. *Journal of Cognitive Neuroscience*, **2011**, 23, 3933-8	3.1	63
169	A common mechanism for adaptive scaling of reward and novelty. *Human Brain Mapping*, **2010**, 31, 1380-94	5.9	63
168	Simple Plans or Sophisticated Habits? State, Transition and Learning Interactions in the Two-Step Task. *PLoS Computational Biology*, **2015**, 11, e1004648	5	61
167	Cortical Surround Interactions and Perceptual Salience via Natural Scene Statistics. *PLoS Computational Biology*, **2012**, 8, e1002405	5	60
166	Exploration bonuses and dual control. *Machine Learning*, **1996**, 25, 5-22	4	60
165	Modeling Avoidance in Mood and Anxiety Disorders Using Reinforcement Learning. *Biological Psychiatry*, **2017**, 82, 532-539	7.9	59
164	Locus coeruleus integrity in old age is selectively related to memories linked with salient negative events. *Proceedings of the National Academy of Sciences of the United States of America*, **2018**, 115, 2228-2233	11.5	59
163	A temporal difference account of avoidance learning. *Network: Computation in Neural Systems*, **2008**, 19, 137-60	0.7	59
162	Goal-directed control and its antipodes. *Neural Networks*, **2009**, 22, 213-9	9.1	58
161	Risk Taking for Potential Reward Decreases across the Lifespan. *Current Biology*, **2016**, 26, 1634-1639	6.3	57
160	Persecutory delusions and the conditioned avoidance paradigm: towards an integration of the psychology and biology of paranoia. *Cognitive Neuropsychiatry*, **2007**, 12, 495-510	2	56
159	Perceptual organization in the tilt illusion. *Journal of Vision*, **2009**, 9, 19.1-20	0.4	55
158	Pharmacological Fingerprints of Contextual Uncertainty. *PLoS Biology*, **2016**, 14, e1002575	9.7	55
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156	Simple substrates for complex cognition. *Frontiers in Neuroscience*, **2008**, 2, 255-63	5.1	53
155	Synapses with short-term plasticity are optimal estimators of presynaptic membrane potentials. *Nature Neuroscience*, **2010**, 13, 1271-5	25.5	52
154	Doubly distributional population codes: simultaneous representation of uncertainty and multiplicity. *Neural Computation*, **2003**, 15, 2255-79	2.9	52
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152	Dopamine, reinforcement learning, and addiction. *Pharmacopsychiatry*, **2009**, 42 Suppl 1, S56-65	2	50
151	Computational phenotyping of two-person interactions reveals differential neural response to depth-of-thought. *PLoS Computational Biology*, **2012**, 8, e1002841	5	49
150	Necessary, yet dissociable contributions of the insular and ventromedial prefrontal cortices to norm adaptation: computational and lesion evidence in humans. *Journal of Neuroscience*, **2015**, 35, 467-73	6.6	48
149	Decision-Theoretic Psychiatry. *Clinical Psychological Science*, **2015**, 3, 400-421	6	46
148	Formalizing Neurath's ship: Approximate algorithms for online causal learning. *Psychological Review*, **2017**, 124, 301-338	6.3	46
147	An effect of serotonergic stimulation on learning rates for rewards apparent after long intertrial intervals. *Nature Communications*, **2018**, 9, 2477	17.4	46
146	Space, Time, and Fear: Survival Computations along Defensive Circuits. *Trends in Cognitive Sciences*, **2020**, 24, 228-241	14	45
145	Striatal structure and function predict individual biases in learning to avoid pain. *Proceedings of the National Academy of Sciences of the United States of America*, **2016**, 113, 4812-7	11.5	45
144	Fast population coding. *Neural Computation*, **2007**, 19, 404-41	2.9	44
143	Uncertainty and Learning. *IETE Journal of Research*, **2003**, 49, 171-181	0.9	43
142	Temporal structure in associative retrieval. *ELife*, **2015**, 4,	8.9	43
141	Dopamine Increases a Value-Independent Gambling Propensity. *Neuropsychopharmacology*, **2016**, 41, 2658-67	8.7	43
140	The Protective Action Encoding of Serotonin Transients in the Human Brain. *Neuropsychopharmacology*, **2018**, 43, 1425-1435	8.7	40
139	The modulation of savouring by prediction error and its effects on choice. *ELife*, **2016**, 5,	8.9	40
138	Bilinearity, rules, and prefrontal cortex. *Frontiers in Computational Neuroscience*, **2007**, 1, 1	3.5	38
137	Increased decision thresholds enhance information gathering performance in juvenile Obsessive-Compulsive Disorder (OCD). *PLoS Computational Biology*, **2017**, 13, e1005440	5	37
136	Charting the landscape of priority problems in psychiatry, part 2: pathogenesis and aetiology. *Lancet Psychiatry,the*, **2016**, 3, 84-90	23.3	37
135	Altered learning under uncertainty in unmedicated mood and anxiety disorders. *Nature Human Behaviour*, **2019**, 3, 1116-1123	12.8	34

134	A probabilistic palimpsest model of visual short-term memory. *PLoS Computational Biology*, **2015**, 11, e1004003	5	31
133	Tamping Ramping: Algorithmic, Implementational, and Computational Explanations of Phasic Dopamine Signals in the Accumbens. *PLoS Computational Biology*, **2015**, 11, e1004622	5	30
132	Safety out of control: dopamine and defence. *Behavioral and Brain Functions*, **2016**, 12, 15	4.1	29
131	Increased decision thresholds trigger extended information gathering across the compulsivity spectrum. *Translational Psychiatry*, **2017**, 7, 1296	8.6	29
130	Nonlinear ideal observation and recurrent preprocessing in perceptual learning. *Network: Computation in Neural Systems*, **2003**, 14, 233-247	0.7	29
129	When money is not enough: awareness, success, and variability in motor learning. *PLoS ONE*, **2014**, 9, e86580	3.7	28
128	Soft mixer assignment in a hierarchical generative model of natural scene statistics. *Neural Computation*, **2006**, 18, 2680-718	2.9	28
127	Pupil-linked phasic arousal evoked by violation but not emergence of regularity within rapid sound sequences. *Nature Communications*, **2019**, 10, 4030	17.4	27
126	Decodability of Reward Learning Signals Predicts Mood Fluctuations. *Current Biology*, **2018**, 28, 1433-1439.e7	8.3	27
125	Selective Bayes: attentional load and crowding. *Vision Research*, **2010**, 50, 2248-60	2.1	27
124	Forming global estimates of self-performance from local confidence. *Nature Communications*, **2019**, 10, 1141	17.4	26
123	How People Use Social Information to Find out What to Want in the Paradigmatic Case of Inter-temporal Preferences. *PLoS Computational Biology*, **2016**, 12, e1004965	5	26
122	Sparse coding can predict primary visual cortex receptive field changes induced by abnormal visual input. *PLoS Computational Biology*, **2013**, 9, e1003005	5	25
121	Serotonin's many meanings elude simple theories. *ELife*, **2015**, 4,	8.9	25
120	The influence of contextual reward statistics on risk preference. *NeuroImage*, **2016**, 128, 74-84	7.9	25
119	Pavlovian-instrumental interaction in 'observing behavior'. *PLoS Computational Biology*, **2010**, 6, e1000903	5	24
118	Attenuation of dopamine-modulated prefrontal value signals underlies probabilistic reward learning deficits in old age. *ELife*, **2017**, 6,	8.9	24
117	The effect of motivation on movement: a study of bradykinesia in Parkinson's disease. *PLoS ONE*, **2012**, 7, e47138	3.7	23

116	Computational differences between asymmetrical and symmetrical networks. *Network: Computation in Neural Systems*, **1999**, 10, 59-77	0.7	23
115	The roles of online and offline replay in planning. *ELife*, **2020**, 9,	8.9	22
114	Values and Actions in Aversion **2009**, 175-191		22
113	Computational differences between asymmetrical and symmetrical networks		22
112	Nonlinear ideal observation and recurrent preprocessing in perceptual learning		22
111	Dissociating neural learning signals in human sign- and goal-trackers. *Nature Human Behaviour*, **2020**, 4, 201-214	12.8	22
110	Pavlovian influences on learning differ between rats and mice in a counter-balanced Go/NoGo judgement bias task. *Behavioural Brain Research*, **2017**, 331, 214-224	3.4	21
109	Monte Carlo Planning Method Estimates Planning Horizons during Interactive Social Exchange. *PLoS Computational Biology*, **2015**, 11, e1004254	5	21
108	The value of what's to come: Neural mechanisms coupling prediction error and the utility of anticipation. *Science Advances*, **2020**, 6, eaba3828	14.3	20
107	Sensory Conflict Disrupts Activity of the Drosophila Circadian Network. *Cell Reports*, **2016**, 17, 1711-1718	10.6	20
106	Rationalizable irrationalities of choice. *Topics in Cognitive Science*, **2014**, 6, 204-28	2.5	20
105	Structure in the Space of Value Functions. *Machine Learning*, **2002**, 49, 325-346	4	20
104	The Dopaminergic Midbrain Mediates an Effect of Average Reward on Pavlovian Vigor. *Journal of Cognitive Neuroscience*, **2016**, 28, 1303-17	3.1	20
103	Change, stability, and instability in the Pavlovian guidance of behaviour from adolescence to young adulthood. *PLoS Computational Biology*, **2018**, 14, e1006679	5	20
102	When planning to survive goes wrong: predicting the future and replaying the past in anxiety and PTSD. *Current Opinion in Behavioral Sciences*, **2018**, 24, 89-95	4	20
101	The limits of chemosensation vary across dimensions. *Nature Communications*, **2015**, 6, 7468	17.4	19
100	Realizing the Clinical Potential of Computational Psychiatry: Report From the Banbury Center Meeting, February 2019. *Biological Psychiatry*, **2020**, 88, e5-e10	7.9	19
99	A model of risk and mental state shifts during social interaction. *PLoS Computational Biology*, **2018**, 14, e1005935	5	19

98	Parsing the Role of the Hippocampus in Approach-Avoidance Conflict. *Cerebral Cortex*, **2017**, 27, 201-215	5.1	19
97	Beta-Blocker Propranolol Modulates Decision Urgency During Sequential Information Gathering. *Journal of Neuroscience*, **2018**, 38, 7170-7178	6.6	18
96	The Role of Value Systems in Decision Making **2008**, 51-70		18
95	Retrospective model-based inference guides model-free credit assignment. *Nature Communications* , **2019**, 10, 750	17.4	17
94	Cognitive Bias in Ambiguity Judgements: Using Computational Models to Dissect the Effects of Mild Mood Manipulation in Humans. *PLoS ONE*, **2016**, 11, e0165840	3.7	17
93	The Anterior Cingulate Cortex Predicts Future States to Mediate Model-Based Action Selection. *Neuron*, **2021**, 109, 149-163.e7	13.9	17
92	The social contingency of momentary subjective well-being. *Nature Communications*, **2016**, 7, 11825	17.4	15
91	A computational account of threat-related attentional bias. *PLoS Computational Biology*, **2019**, 15, e1007341	5	15
90	Magnetoencephalography decoding reveals structural differences within integrative decision processes. *Nature Human Behaviour*, **2018**, 2, 670-681	12.8	15
89	Matters temporal. *Trends in Cognitive Sciences*, **2002**, 6, 105-106	14	14
88	Semi-rational models of conditioning: **2008**, 431-452		14
87	Assessing animal affect: an automated and self-initiated judgement bias task based on natural investigative behaviour. *Scientific Reports*, **2018**, 8, 12400	4.9	14
86	Prefrontal Dynamics Associated with Efficient Detours and Shortcuts: A Combined Functional Magnetic Resonance Imaging and Magnetoencenphalography Study. *Journal of Cognitive Neuroscience*, **2019**, 31, 1227-1247	3.1	13
85	Optimal recall from bounded metaplastic synapses: predicting functional adaptations in hippocampal area CA3. *PLoS Computational Biology*, **2014**, 10, e1003489	5	13
84	Optimal indolence: a normative microscopic approach to work and leisure. *Journal of the Royal Society Interface*, **2014**, 11, 20130969	4.1	13
83	Models that learn how humans learn: The case of decision-making and its disorders. *PLoS Computational Biology*, **2019**, 15, e1006903	5	12
82	Deep brain stimulation of the subthalamic nucleus modulates sensitivity to decision outcome value in Parkinson's disease. *Scientific Reports*, **2016**, 6, 32509	4.9	12
81	The Neural Basis of Aversive Pavlovian Guidance during Planning. *Journal of Neuroscience*, **2017**, 37, 10216-10229	6.6	12

80	Early childhood investment impacts social decision-making four decades later. *Nature Communications*, **2018**, 9, 4705	17.4	12
79	Prior preferences beneficially influence social and non-social learning. *Nature Communications*, **2017**, 8, 817	17.4	11
78	Backtracking during navigation is correlated with enhanced anterior cingulate activity and suppression of alpha oscillations and the 'default-mode' network. *Proceedings of the Royal Society B: Biological Sciences*, **2019**, 286, 20191016	4.4	11
77	Recurrent sampling models for the Helmholtz machine. *Neural Computation*, **1999**, 11, 653-78	2.9	10
76	Light Dominates Peripheral Circadian Oscillations in Drosophila melanogaster During Sensory Conflict. *Journal of Biological Rhythms*, **2017**, 32, 423-432	3.2	9
75	An unsupervised learning model of neural plasticity: Orientation selectivity in goggle-reared kittens. *Vision Research*, **2007**, 47, 2868-77	2.1	9
74	Images, frames, and connectionist hierarchies. *Neural Computation*, **2006**, 18, 2293-319	2.9	9
73	Anterior cingulate cortex represents action-state predictions and causally mediates model-based reinforcement learning in a two-step decision task		9
72	Uncertainty in learning, choice, and visual fixation. *Proceedings of the National Academy of Sciences of the United States of America*, **2020**, 117, 3291-3300	11.5	8
71	The three R's of trust. *Current Opinion in Behavioral Sciences*, **2015**, 3, 102-106	4	8
70	Some work and some play: microscopic and macroscopic approaches to labor and leisure. *PLoS Computational Biology*, **2014**, 10, e1003894	5	8
69	Prospective and retrospective temporal difference learning. *Network: Computation in Neural Systems*, **2009**, 20, 32-46	0.7	8
68	The Variance of Covariance Rules for Associative Matrix Memories and Reinforcement Learning. *Neural Computation*, **1993**, 5, 205-209	2.9	8
67	Interrupting behaviour: Minimizing decision costs via temporal commitment and low-level interrupts. *PLoS Computational Biology*, **2018**, 14, e1005916	5	8
66	Impaired adaptation of learning to contingency volatility in internalizing psychopathology. *ELife*, **2020**, 9,	8.9	8
65	Multiple value signals in dopaminergic midbrain and their role in avoidance contexts. *NeuroImage*, **2016**, 135, 197-203	7.9	8
64	Taming the shrewdness of neural function: methodological challenges in computational psychiatry. *Current Opinion in Behavioral Sciences*, **2015**, 5, 128-132	4	6
63	The influence of receptor positioning on chemotactic information. *Journal of Theoretical Biology*, **2014**, 360, 95-101	2.3	6

62	Models of Value and Choice **2012**, 33-52		6
61	Exploration from Generalization Mediated by Multiple Controllers **2013**, 73-91		6
60	Reward and punisher experience alter rodent decision-making in a judgement bias task. *Scientific Reports*, **2020**, 10, 11839	4.9	6
59	Control of neurite growth and guidance by an inhibitory cell-body signal. *PLoS Computational Biology*, **2018**, 14, e1006218	5	6
58	Combined model-free and model-sensitive reinforcement learning in non-human primates. *PLoS Computational Biology*, **2020**, 16, e1007944	5	5
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56	The role of background statistics in face adaptation. *Journal of Neuroscience*, **2009**, 29, 12035-44	6.6	5
55	Pattern formation and cortical maps. *Journal of Physiology (Paris)*, **2003**, 97, 475-89		5
54	Human subjects exploit a cognitive map for credit assignment. *Proceedings of the National Academy of Sciences of the United States of America*, **2021**, 118,	11.5	5
53	Reinforcement Learning		5
52	Computational Psychiatry for Computers. *IScience*, **2020**, 23, 101772	6.1	4
51	Recognition in Hierarchical Models **1997**, 43-62		4
50	Integrated accounts of behavioral and neuroimaging data using flexible recurrent neural network models		4
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