Andreas Nieder

List of Publications by Year
in descending order

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126 papers	10,021 citations	31902 53 h-index	38300 95 g-index
134 all docs	134 docs citations	134 times ranked	4728 citing authors

#	Article	IF	Citations
1	Representation of the Quantity of Visual Items in the Primate Prefrontal Cortex. Science, 2002, 297, 1708-1711.	6.0	766
2	Representation of Number in the Brain. Annual Review of Neuroscience, 2009, 32, 185-208.	5.0	719
3	Coding of Cognitive Magnitude. Neuron, 2003, 37, 149-157.	3.8	479
4	A parieto-frontal network for visual numerical information in the monkey. Proceedings of the National Academy of Sciences of the United States of America, 2004, 101, 7457-7462.	3.3	464
5	Counting on neurons: the neurobiology of numerical competence. Nature Reviews Neuroscience, 2005, 6, 177-190.	4.9	462
6	Temporal and Spatial Enumeration Processes in the Primate Parietal Cortex. Science, 2006, 313, 1431-1435.	6.0	322
7	Dopamine and Cognitive Control in Prefrontal Cortex. Trends in Cognitive Sciences, 2019, 23, 213-234.	4.0	309
8	The neuronal code for number. Nature Reviews Neuroscience, 2016, 17, 366-382.	4.9	303
9	Neuronal population coding of continuous and discrete quantity in the primate posterior parietal cortex. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 14513-14518.	3.3	237
10	A Labeled-Line Code for Small and Large Numerosities in the Monkey Prefrontal Cortex. Journal of Neuroscience, 2007, 27, 5986-5993.	1.7	193
11	Supramodal numerosity selectivity of neurons in primate prefrontal and posterior parietal cortices. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 11860-11865.	3.3	182
12	Neuronal correlates of a visual â€œsense of numberâ€•in primate parietal and prefrontal cortices. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 11187-11192.	3.3	167
13	Neurons selective to the number of visual items in the corvid songbird endbrain. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 7827-7832.	3.3	166
14	Neural correlates of categories and concepts. Current Opinion in Neurobiology, 2003, 13, 198-203.	2.0	158
15	Semantic Associations between Signs and Numerical Categories in the Prefrontal Cortex. PLoS Biology, 2007, 5, e294.	2.6	141
16	Tuning to nonâ€symbolic proportions in the human frontoparietal cortex. European Journal of Neuroscience, 2009, 30, 1432-1442.	1.2	138
17	Contributions of Primate Prefrontal and Posterior Parietal Cortices to Length and Numerosity Representation. Journal of Neurophysiology, 2009, 101, 2984-2994.	0.9	134
18	Notation-Independent Representation of Fractions in the Human Parietal Cortex. Journal of Neuroscience, 2009, 29, 4652-4657.	1.7	125

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19	Relating magnitudes: the brain's code for proportions. Trends in Cognitive Sciences, 2012, 16, 157-166.	4.0	123
20	Abstract rule neurons in the endbrain support intelligent behaviour in corvid songbirds. Nature Communications, 2013, 4, 2878.	5.8	119
21	Single neurons in monkey prefrontal cortex encode volitional initiation of vocalizations. Nature Communications, 2013, 4, 2409.	5.8	119
22	Dual Neural Network Model for the Evolution of Speech and Language. Trends in Neurosciences, 2016, 39, 813-829.	4.2	117
23	Complementary Roles for Primate Frontal and Parietal Cortex in Guarding Working Memory from Distractor Stimuli. Neuron, 2014, 83, 226-237.	3.8	113
24	Prefrontal cortex and the evolution of symbolic reference. Current Opinion in Neurobiology, 2009, 19, 99-108.	2.0	108
25	Neuronal Correlates of Visual Working Memory in the Corvid Endbrain. Journal of Neuroscience, 2014, 34, 7778-7786.	1.7	108
26	Behavioral and Prefrontal Representation of Spatial Proportions in the Monkey. Current Biology, 2008, 18, 1420-1425.	1.8	105
27	Analog Numerical Representations in Rhesus Monkeys: Evidence for Parallel Processing. Journal of Cognitive Neuroscience, 2004, 16, 889-901.	1.1	104
28	Perception and neuronal coding of subjective contours in the owl. Nature Neuroscience, 1999, 2, 660-663.	7.1	101
29	Cognitive Control of Distinct Vocalizations in Rhesus Monkeys. Journal of Cognitive Neuroscience, 2013, 25, 1692-1701.	1.1	98
30	Single Neurons in the Human Brain Encode Numbers. Neuron, 2018, 100, 753-761.e4.	3.8	98
31	A neural correlate of sensory consciousness in a corvid bird. Science, 2020, 369, 1626-1629.	6.0	98
32	Neuronal Representation of Numerosity Zero in the Primate Parieto-Frontal Number Network. Current Biology, 2016, 26, 1285-1294.	1.8	91
33	Basic mathematical rules are encoded by primate prefrontal cortex neurons. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 2277-2282.	3.3	90
34	Numerosity representations in crows obey the Weberâ€“Fechner law. Proceedings of the Royal Society B: Biological Sciences, 2016, 283, 20160083.	1.2	88
35	Differential Impact of Behavioral Relevance on Quantity Coding in Primate Frontal and Parietal Neurons. Current Biology, 2015, 25, 1259-1269.	1.8	86
36	The neurobiology of innate, volitional and learned vocalizations in mammals and birds. Philosophical Transactions of the Royal Society B: Biological Sciences, 2020, 375, 20190054.	1.8	84

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37	The Number Domainâ€" Can We Count on Parietal Cortex?. Neuron, 2004, 44, 407-409.	3.8	81
38	Number detectors spontaneously emerge in a deep neural network designed for visual object recognition. Science Advances, 2019, 5, eaav7903.	4.7	80
39	The Adaptive Value of Numerical Competence. Trends in Ecology and Evolution, 2020, 35, 605-617.	4.2	79
40	Dopamine Receptors Differentially Enhance Rule Coding in Primate Prefrontal Cortex Neurons. Neuron, 2014, 84, 1317-1328.	3.8	77
41	Complementary Contributions of Prefrontal Neuron Classes in Abstract Numerical Categorization. Journal of Neuroscience, 2008, 28, 7737-7747.	1.7	76
42	Ontogeny of object permanence and object tracking in the carrion crow, Corvus corone. Animal Behaviour, 2011, 82, 359-367.	0.8	71
43	Compressed Scaling of Abstract Numerosity Representations in Adult Humans and Monkeys. Journal of Cognitive Neuroscience, 2009, 21, 333-346.	1.1	69
44	Active encoding of decisions about stimulus absence in primate prefrontal cortex neurons. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 6289-6294.	3.3	68
45	Coding of abstract quantity by â€˜number neuronsâ€™ of the primate brain. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2013, 199, 1-16.	0.7	68
46	Cross-Modal Associative Mnemonic Signals in Crow Endbrain Neurons. Current Biology, 2015, 25, 2196-2201.	1.8	66
47	Representation of Abstract Quantitative Rules Applied to Spatial and Numerical Magnitudes in Primate Prefrontal Cortex. Journal of Neuroscience, 2013, 33, 7526-7534.	1.7	64
48	Associative learning rapidly establishes neuronal representations of upcoming behavioral choices in crows. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 15208-15213.	3.3	64
49	Miniature stereo radio transmitter for simultaneous recording of multiple single-neuron signals from behaving owls. Journal of Neuroscience Methods, 2000, 101, 157-164.	1.3	62
50	Audio-Vocal Interaction in Single Neurons of the Monkey Ventrolateral Prefrontal Cortex. Journal of Neuroscience, 2015, 35, 7030-7040.	1.7	60
51	Numerical Rule Coding in the Prefrontal, Premotor, and Posterior Parietal Cortices of Macaques. Journal of Neuroscience, 2012, 32, 6621-6630.	1.7	58
52	Dopamine Regulates Two Classes of Primate Prefrontal Neurons That Represent Sensory Signals. Journal of Neuroscience, 2013, 33, 13724-13734.	1.7	58
53	Inside the corvid brainâ€"probing the physiology of cognition in crows. Current Opinion in Behavioral Sciences, 2017, 16, 8-14.	2.0	58
54	Representing Something Out of Nothing: The Dawning of Zero. Trends in Cognitive Sciences, 2016, 20, 830-842.	4.0	57

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55	Sensory and Working Memory Representations of Small and Large Numerosities in the Crow Endbrain. Journal of Neuroscience, 2016, 36, 12044-12052.	1.7	56
56	Comparison of length judgments and the MÃ¼ller-Lyer illusion in monkeys and humans. Experimental Brain Research, 2010, 207, 221-231.	0.7	55
57	Structuring of Abstract Working Memory Content by Fronto-parietal Synchrony in Primate Cortex. Neuron, 2018, 99, 588-597.e5.	3.8	54
58	Horizontal-Disparity Tuning of Neurons in the Visual Forebrain of the Behaving Barn Owl. Journal of Neurophysiology, 2000, 83, 2967-2979.	0.9	52
59	Hierarchical Processing of Horizontal Disparity Information in the Visual Forebrain of Behaving Owls. Journal of Neuroscience, 2001, 21, 4514-4522.	1.7	50
60	Neurons in the Endbrain of Numerically Naive Crows Spontaneously Encode Visual Numerosity. Current Biology, 2018, 28, 1090-1094.e4.	1.8	50
61	Serotonin Decreases the Gain of Visual Responses in Awake Macaque V1. Journal of Neuroscience, 2017, 37, 11390-11405.	1.7	47
62	Single-cell coding of sensory, spatial and numerical magnitudes in primate prefrontal, premotor and cingulate motor cortices. Experimental Brain Research, 2016, 234, 241-254.	0.7	43
63	Evolution of cognitive and neural solutions enabling numerosity judgements: lessons from primates and corvids. Philosophical Transactions of the Royal Society B: Biological Sciences, 2018, 373, 20160514.	1.8	43
64	Representations of visual proportions in the primate posterior parietal and prefrontal cortices. European Journal of Neuroscience, 2010, 32, 1380-1387.	1.2	39
65	Functional Specialization of the Primate Frontal Lobe during Cognitive Control of Vocalizations. Cell Reports, 2017, 21, 2393-2406.	2.9	38
66	Adjustable frequency selectivity of auditory forebrain neurons recorded in a freely moving songbird via radiotelemetry. Hearing Research, 1999, 127, 41-54.	0.9	36
67	Cell-type-specific modulation of targets and distractors by dopamine D1 receptors in primate prefrontal cortex. Nature Communications, 2016, 7, 13218.	5.8	36
68	Neuronal Correlates of Spatial Working Memory in the Endbrain of Crows. Current Biology, 2019, 29, 2616-2624.e4.	1.8	36
69	The ABC of cardinal and ordinal number representations. Trends in Cognitive Sciences, 2008, 12, 41-43.	4.0	35
70	Format-dependent and format-independent representation of sequential and simultaneous numerosity in the crow endbrain. Nature Communications, 2020, 11, 686.	5.8	35
71	Developmental changes of cognitive vocal control in monkeys. Journal of Experimental Biology, 2016, 219, 1744-1749.	0.8	34
72	Signal detection in amplitude-modulated maskers. II. Processing in the songbird's auditory forebrain. European Journal of Neuroscience, 2001, 13, 1033-1044.	1.2	31

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73	Dopamine D2 Receptors Enhance Population Dynamics in Primate Prefrontal Working Memory Circuits. Cerebral Cortex, 2017, 27, 4423-4435.	1.6	29
74	Encoding of both vertical and horizontal disparity in random-dot stereograms by Wulst neurons of awake barn owls. Visual Neuroscience, 2001, 18, 541-547.	0.5	28
75	Number Faculty Is Rooted in Our Biological Heritage. Trends in Cognitive Sciences, 2017, 21, 403-404.	4.0	28
76	The Evolutionary History of Brains for Numbers. Trends in Cognitive Sciences, 2021, 25, 608-621.	4.0	28
77	The long and the short of it: Rule-based relative length discrimination in carrion crows, Corvus corone. Behavioural Processes, 2014, 107, 142-149.	0.5	25
78	Behavioral and Neuronal Representation of Numerosity Zero in the Crow. Journal of Neuroscience, 2021, 41, 4889-4896.	1.7	24
79	Neural constraints on human number concepts. Current Opinion in Neurobiology, 2020, 60, 28-36.	2.0	23
80	Volitional control of vocalizations in corvid songbirds. PLoS Biology, 2019, 17, e3000375.	2.6	22
81	Working memory capacity of crows and monkeys arises from similar neuronal computations. ELife, 2021, 10, .	2.8	21
82	Parting self from others: Individual and self-recognition in birds. Neuroscience and Biobehavioral Reviews, 2020, 116, 99-108.	2.9	19
83	Spatial Neuronal Integration Supports a Global Representation of Visual Numerosity in Primate Association Cortices. Journal of Cognitive Neuroscience, 2020, 32, 1184-1197.	1.1	19
84	Carrion crows (Corvus corone corone) fail the mirror mark test yet again.. Journal of Comparative Psychology (Washington, D C: 1983), 2020, 134, 372-378.	0.3	18
85	Spatially Tuned Neurons in Corvid Nidopallium Caudolaterale Signal Target Position During Visual Search. Cerebral Cortex, 2017, 27, bhv299.	1.6	17
86	Dopamine Gates Visual Signals in Monkey Prefrontal Cortex Neurons. Cell Reports, 2020, 30, 164-172.e4.	2.9	17
87	Neural Code of Motor Planning and Execution during Goal-Directed Movements in Crows. Journal of Neuroscience, 2021, 41, 4060-4072.	1.7	17
88	Comparing the face inversion effect in crows and humans. Journal of Comparative Physiology A: Neuroethology, Sensory, Neural, and Behavioral Physiology, 2017, 203, 1017-1027.	0.7	16
89	A random-matrix theory of the number sense. Philosophical Transactions of the Royal Society B: Biological Sciences, 2018, 373, 20170253.	1.8	16
90	Neuroethology of number sense across the animal kingdom. Journal of Experimental Biology, 2021, 224, .	0.8	16

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91	Magnitude Codes for Cross-Modal Working Memory in the Primate Frontal Association Cortex. Frontiers in Neuroscience, 2017, 11, 202.	1.4	15
92	Neuronal codes for arithmetic rule processing in the human brain. Current Biology, 2022, 32, 1275-1284.e4.	1.8	15
93	Release from masking in fluctuating background noise in a songbird's auditory forebrain. NeuroReport, 2001, 12, 1825-1829.	0.6	14
94	Numerical Values Leave a Semantic Imprint on Associated Signs in Monkeys. Journal of Cognitive Neuroscience, 2010, 22, 174-183.	1.1	14
95	The evolution of quantitative sensitivity. Philosophical Transactions of the Royal Society B: Biological Sciences, 2022, 377, 20200529.	1.8	14
96	Comparison of abstract decision encoding in the monkey prefrontal cortex, the presupplementary, and cingulate motor areas. Journal of Neurophysiology, 2013, 110, 19-32.	0.9	13
97	Modality-invariant audio-visual association coding in crow endbrain neurons. Neurobiology of Learning and Memory, 2017, 137, 65-76.	1.0	13
98	Honey bees zero in on the empty set. Science, 2018, 360, 1069-1070.	6.0	13
99	Distinct neural networks for the volitional control of vocal and manual actions in the monkey homologue of Broca's area. ELife, 2021, 10, .	2.8	13
100	Neurons in the crow nidopallium caudolaterale encode varying durations of visual working memory periods. Experimental Brain Research, 2018, 236, 215-226.	0.7	12
101	Consciousness without cortex. Current Opinion in Neurobiology, 2021, 71, 69-76.	2.0	12
102	Neurons in the Hippocampus of Crows Lack Responses to Non-spatial Abstract Categories. Frontiers in Systems Neuroscience, 2018, 12, 33.	1.2	11
103	Blockage of NMDA- and GABA(A) Receptors Improves Working Memory Selectivity of Primate Prefrontal Neurons. Journal of Neuroscience, 2020, 40, 1527-1537.	1.7	11
104	Working memory representation of empty sets in the primate parietal and prefrontal cortices. Cortex, 2019, 114, 102-114.	1.1	10
105	Absolute Numerosity Discrimination as a Case Study in Comparative Vertebrate Intelligence. Frontiers in Psychology, 2020, 11, 1843.	1.1	10
106	Visual Receptive Field Heterogeneity and Functional Connectivity of Adjacent Neurons in Primate Frontoparietal Association Cortices. Journal of Neuroscience, 2017, 37, 8919-8928.	1.7	9
107	Cell-type specific pallial circuits shape categorical tuning responses in the crow telencephalon. Communications Biology, 2022, 5, 269.	2.0	9
108	Rule Activity Related to Spatial and Numerical Magnitudes: Comparison of Prefrontal, Premotor, and Cingulate Motor Cortices. Journal of Cognitive Neuroscience, 2014, 26, 1000-1012.	1.1	8

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109	Ethograms indicate stable well-being during prolonged training phases in rhesus monkeys used in neurophysiological research. Laboratory Animals, 2014, 48, 82-87.	0.5	8
110	Spontaneous representation of numerosity zero in a deep neural network for visual object recognition. IScience, 2021, 24, 103301.	1.9	8
111	Comparison of visual receptive fields in the dorsolateral prefrontal cortex and ventral intraparietal area in macaques. European Journal of Neuroscience, 2017, 46, 2702-2712.	1.2	7
112	Encoding of global visual motion in the nidopallium caudolaterale of behaving crows. European Journal of Neuroscience, 2017, 45, 267-277.	1.2	7
113	Dopamine Receptors Influence Internally Generated Oscillations during Rule Processing in Primate Prefrontal Cortex. Journal of Cognitive Neuroscience, 2018, 30, 770-784.	1.1	7
114	Categorical Auditory Working Memory in Crows. IScience, 2020, 23, 101737.	1.9	7
115	A histological study of the song system of the carrion crow (<scp>Corvus corone</scp>). Journal of Comparative Neurology, 2021, 529, 2576-2595.	0.9	7
116	Stereoscopic Vision: Solving the Correspondence Problem. Current Biology, 2003, 13, R394-R396.	1.8	5
117	Stable numerosity representations irrespective of magnitude context in macaque prefrontal cortex. European Journal of Neuroscience, 2014, 39, 866-874.	1.2	5
118	Learning Recruits Neurons Representing Previously Established Associations in the Corvid Endbrain. Journal of Cognitive Neuroscience, 2017, 29, 1712-1724.	1.1	5
119	Feature-based attention processes in primate prefrontal cortex do not rely on feature similarity. Cell Reports, 2021, 36, 109470.	2.9	5
120	Interrelation of kinetic and stereoscopic depth: behavior and physiology in vertebrates. Behavioural Processes, 2003, 64, 13-16.	0.5	4
121	The Neural Code for Number. , 2011, , 103-118.		4
122	Number faculty is alive and kicking: On number discriminations and number neurons. Behavioral and Brain Sciences, 2017, 40, e181.	0.4	3
123	Neurobiologische Grundlagen der Verarbeitung von Anzahlen und Proportionen im Primatengehirn. E-Neuroforum, 2012, 18, 196-203.	0.2	1
124	Primate Social Communication Goes Interactive. Neuron, 2018, 99, 250-253.	3.8	1
125	Temporal and spatial enumeration processes in the primate parietal cortex. E-Neuroforum, 2006, 12, 267-269.	0.2	0
126	Representation of Numerical Information in the Brain. , 2007, , 271-283.		0