



Corrigendum: Comparative neuronal morphology of the cerebellar cortex in afrotherians, carnivores, cetartiodactyls, and primates

Bob Jacobs^{1*}, Nicholas L. Johnson¹, Devin Wahl¹, Matthew Schall¹, Busisiwe C. Maseko², Albert Lewandowski³, Mary A. Raghanti⁴, Bridget Wicinski⁵, Camilla Butti⁵, William D. Hopkins⁶, Mads F. Bertelsen⁷, Timothy Walsh⁸, John R. Roberts⁸, Roger L. Reep⁹, Patrick R. Hof⁵, Chet C. Sherwood¹⁰ and Paul R. Manger²

¹ Laboratory of Quantitative Neuromorphology, Psychology, Colorado College, Colorado Springs, CO, USA

² Faculty of Health Sciences, School of Anatomical Sciences, University of the Witwatersrand, Johannesburg, South Africa

³ Cleveland Metroparks Zoo, Cleveland, OH, USA

⁴ Department of Anthropology, Kent State University, Kent, OH, USA

⁵ Fishberg Department of Neuroscience and Friedman Brain Institute, Icahn School of Medicine at Mount Sinai, New York, NY, USA

⁶ Division of Developmental and Cognitive Neuroscience, Yerkes National Primate Research Center, Atlanta, GA, USA

⁷ Center for Zoo and Wild Animal Health, Copenhagen Zoo, Frederiksberg, Denmark

⁸ Smithsonian National Zoological Park, Washington, DC, USA

⁹ Department of Physiological Sciences, University of Florida, Gainesville, FL, USA

¹⁰ Department of Anthropology, The George Washington University, Washington, DC, USA

*Correspondence: bjacobs@coloradocollege.edu

Edited and reviewed by:

Suzanaerculano-Houzel, Universidade Federal do Rio de Janeiro, Brazil

Keywords: dendrite, morphometry, Golgi method, brain evolution, cerebellum

A corrigendum on

Comparative neuronal morphology of the cerebellar cortex in afrotherians, carnivores, cetartiodactyls, and primates

by Jacobs, B., Johnson, N. L., Wahl, D., Schall, M., Maseko, B. C., Lewandowski, A., et al. (2014) *Front. Neuroanat.* 8:24. doi: 10.3389/fnana.2014.00024

There was a typographical error in **Table 2** of Jacobs et al. (2014) as one partial row of data is repeated. Specifically, for Vol., the values for the Clouded Leopard Stellate cells are repeated in place of the Granule cells. For the Clouded Leopard

Granule cells, the values should NOT be the following:

Mean = 691.9, SD = 222.2, L95% = 247.4, U95% = 1136.4.

Instead, these values should be:

Mean = 51.4, SD = 32.9, L95% = -14.4, U95% = 117.3.

None of the corrections are in bold font.

Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Received: 02 June 2014; accepted: 27 June 2014; published online: 23 July 2014.

Citation: Jacobs B, Johnson NL, Wahl D, Schall M, Maseko BC, Lewandowski A, Raghanti MA, Wicinski B,

Butti C, Hopkins WD, Bertelsen MF, Walsh T, Roberts JR, Reep RL, Hof PR, Sherwood CC and Manger PR (2014) Corrigendum: Comparative neuronal morphology of the cerebellar cortex in afrotherians, carnivores, cetartiodactyls, and primates. *Front. Neuroanat.* 8:69. doi: 10.3389/fnana.2014.00069

This article was submitted to the journal *Frontiers in Neuroanatomy*.

Copyright © 2014 Jacobs, Johnson, Wahl, Schall, Maseko, Lewandowski, Raghanti, Wicinski, Butti, Hopkins, Bertelsen, Walsh, Roberts, Reep, Hof, Sherwood and Manger. This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY). The use, distribution or reproduction in other forums is permitted, provided the original author(s) or licensor are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.

Table 2 | Dendritic measures and soma size for each neuronal type across species.^a

Species ^a	Cell type	Vol				TDL				
		Mean	SD	L95%	U95%	Mean	SD	L95%	U95%	
Clouded Leopard	Stellate	691.9	222.2	247.4	1136.4	1367.2	489.8	387.6	2346.7	
	Basket	1463.4	660.4	142.7	2784.2	2156.5	890.2	376.1	3937.0	
	Lugaro	1664.6	694.7	275.3	3054.0	899.1	531.1	-163.1	1961.4	
	Golgi	1693.7	-	-	-	1528.3	-	-	-	
	Granule	51.4	32.9	-14.4	117.3	140.6	69.1	2.5	278.7	
Siberian Tiger	Stellate	790.0	188.2	413.6	1166.4	1463.7	401.2	661.3	2266.0	
	Basket	1081.2	585.5	-89.8	2252.1	1284.7	544.2	196.2	2373.2	
	Lugaro	3252.9	1550.6	151.8	6354.0	1286.3	153.7	978.9	1593.7	
	Golgi	5018.1	3215.0	-1411.9	11,448.1	3076.0	744.9	1586.3	4565.7	
	Granule	129.9	35.6	58.7	201.1	303.7	57.0	189.8	417.6	
Florida Manatee	Stellate	1836.2	302.7	1230.8	2441.6	1969.8	490.4	989.0	2950.6	
	Basket	2202.3	399.3	1403.7	3000.9	1993.1	421.8	1149.4	2836.8	
	Lugaro	2401.6	-	-	-	1651.9	-	-	-	
	Golgi	-	-	-	-	-	-	-	-	
	Granule	-	-	-	-	-	-	-	-	
Common Chimpanzee	Stellate	524.5	304.1	-83.6	1132.7	2029.6	1170.8	-312.0	4371.2	
	Basket	954.0	494.5	-35.0	1943.0	2408.3	1235.3	-62.4	4879.0	
	Lugaro	1453.8	858.5	-263.2	3170.8	952.3	479.3	-6.2	1910.9	
	Golgi	1287.0	631.2	24.7	2549.3	1455.9	639.7	176.5	2735.2	
	Granule	46.0	23.0	0.0	91.9	126.1	37.7	50.7	201.4	
Giraffe	Stellate	1725.8	616.2	493.5	2958.2	2254.1	733.9	786.3	3721.9	
	Basket	1905.1	714.1	476.8	3333.4	2314.5	764.6	785.2	3843.7	
	Lugaro	3222.4	1887.7	-553.0	6997.7	2136.8	1449.0	-761.2	5034.8	
	Golgi	6333.3	2150.1	2033.0	10,633.6	2907.3	1425.6	56.1	5758.5	
	Granule	241.4	58.6	124.2	358.5	275.4	116.0	43.4	507.4	
Human	Stellate	1977.5	601.3	774.8	3180.2	3583.7	1016.9	1550.0	5617.4	
	Basket	2163.5	699.1	765.3	3561.7	3374.5	1083.8	1206.9	5542.1	
	Lugaro	3812.9	1887.3	38.2	7587.5	2467.2	599.3	1268.5	3665.8	
	Golgi	5942.7	3530.7	-1118.7	13,004.0	5098.0	2866.9	-635.9	10,831.9	
	Granule	117.5	48.8	20.0	215.1	166.3	44.3	77.7	254.9	
Humpback Whale	Stellate	781.8	249.1	283.6	1280.0	1785.9	520.9	744.1	2827.7	
	Basket	1641.4	513.0	615.5	2667.4	3018.0	839.3	1339.5	4696.5	
	Lugaro	3902.2	2716.4	-1530.6	9335.0	1121.3	708.5	-295.6	2538.2	
	Golgi	2358.4	962.9	432.6	4284.1	1759.6	435.7	888.1	2631.0	
	Granule	78.0	29.5	19.0	136.9	180.9	58.0	64.9	296.8	
African Elephant	Stellate	7681.2	2844.1	1993.0	13,369.3	5501.0	1561.2	2378.5	8623.4	
	Basket	12,890.4	4406.2	4078.0	21,702.8	6212.4	2501.7	1209.0	11,215.7	
	Lugaro	37,395.8	17,331.0	2733.8	72,057.7	3019.1	884.0	1251.2	4787.1	
	Golgi	16,637.0	3951.5	8734.1	24,540.0	5664.2	878.9	3906.4	7422.0	
	Granule	-	-	-	-	-	-	-	-	
Clouded leopard			MSL				DSC			
	Stellate	29.3	4.5	20.4	38.3	47.5	18.3	10.9	84.1	
	Basket	40.4	3.2	34.1	46.8	52.8	20.8	11.2	94.4	
	Lugaro	45.1	3.6	37.9	52.3	20.3	12.7	-5.1	45.6	
	Golgi	50.9	-	-	-	30.0	-	-	-	

(Continued)

Table 2 | Continued

Species ^a	Cell type	MSL				DSC			
		Mean	SD	L95%	U95%	Mean	SD	L95%	U95%
	Granule	13.0	5.3	2.4	23.6	11.5	6.0	-0.5	23.5
Siberian tiger	Stellate	43.1	8.3	26.5	59.7	36.0	14.9	6.2	65.8
	Basket	40.4	14.7	10.9	69.9	32.6	9.5	13.6	51.6
	Lugaro	109.2	82.1	-55.1	273.4	16.3	9.1	-1.8	34.5
	Golgi	38.0	12.3	13.4	62.7	86.0	29.7	26.7	145.3
	Granule	11.0	3.1	4.7	17.3	29.8	11.3	7.2	52.4
Florida manatee	Stellate	62.1	9.3	43.5	80.6	31.5	3.6	24.4	38.6
	Basket	67.2	14.9	37.3	97.1	30.5	7.4	15.8	45.2
	Lugaro	57.0	-	-	-	29.0	-	-	-
	Golgi	-	-	-	-	-	-	-	-
	Granule	-	-	-	-	-	-	-	-
Common chimpanzee	Stellate	33.2	9.1	15.0	51.4	58.5	23.4	11.6	105.3
	Basket	39.3	7.9	23.5	55.0	62.8	34.0	-5.2	130.9
	Lugaro	57.3	20.5	16.4	98.2	18.0	8.8	0.4	35.6
	Golgi	46.8	12.9	21.1	72.5	30.9	9.9	11.0	50.7
	Granule	10.5	2.4	5.7	15.2	12.6	4.4	3.8	21.4
Giraffe	Stellate	52.2	10.6	31.0	73.3	45.0	17.4	10.3	79.7
	Basket	65.4	25.2	14.9	115.9	37.4	10.7	16.0	58.8
	Lugaro	41.4	11.6	18.1	64.7	55.0	42.4	-29.8	139.8
	Golgi	45.8	9.6	26.5	65.0	64.4	31.3	1.8	127.1
	Granule	12.5	4.3	4.0	21.1	23.5	9.4	4.7	42.2
Human	Stellate	53.1	10.4	32.4	73.8	67.1	12.1	42.9	91.4
	Basket	49.8	6.3	37.2	62.5	69.3	27.1	15.1	123.5
	Lugaro	85.4	30.2	24.9	145.9	32.0	11.9	8.2	55.8
	Golgi	67.5	11.7	44.1	90.9	73.4	32.5	8.4	138.4
	Granule	14.0	3.4	7.2	20.7	12.0	2.4	7.1	16.9
Humpback whale	Stellate	43.8	9.5	24.9	62.7	41.1	9.8	21.6	60.7
	Basket	52.5	11.0	30.5	74.4	59.1	20.7	17.7	100.4
	Lugaro	58.3	25.8	6.6	109.9	21.0	13.3	-5.6	47.6
	Golgi	42.2	12.0	18.3	66.1	43.8	14.5	14.9	72.7
	Granule	10.1	2.6	4.9	15.3	18.4	6.2	6.1	30.7
African elephant	Stellate	49.0	5.6	37.8	60.1	114.4	40.2	33.9	194.9
	Basket	64.8	10.6	43.6	86.0	96.2	33.6	29.1	163.3
	Lugaro	70.6	14.1	42.3	98.9	44.2	17.1	10.0	78.4
	Golgi	40.4	7.1	26.3	54.5	143.2	32.9	77.4	209.0
	Granule	-	-	-	-	-	-	-	-
		Tor				Soma Size			
Clouded leopard	Stellate	1.12	0.05	1.02	1.21	118.1	18.7	80.7	155.5
	Basket	1.11	0.03	1.05	1.16	143.8	11.8	120.2	167.4
	Lugaro	1.11	0.03	1.05	1.17	359.3	112.6	134.1	584.6
	Golgi	1.16	-	-	-	242.0	-	-	-
	Granule	1.29	0.14	1.01	1.57	50.7	6.7	37.3	64.2
Siberian	Stellate	1.15	0.05	1.05	1.24	125.2	13.2	98.7	151.7
	Basket	1.12	0.05	1.03	1.22	148.2	21.9	104.4	192.0

(Continued)

Table 2 | Continued

Species ^a	Cell type	Tor				Soma Size			
		Mean	SD	L95%	U95%	Mean	SD	L95%	U95%
tiger	Lugaro	1.11	0.03	1.05	1.16	384.9	140.0	104.8	665.0
	Golgi	1.11	0.02	1.07	1.14	480.1	94.1	291.8	668.3
	Granule	1.19	0.07	1.06	1.32	63.8	10.6	42.5	85.1
Florida manatee	Stellate	1.17	0.07	1.04	1.31	170.3	16.6	137.1	203.4
	Basket	1.17	0.06	1.06	1.29	203.8	21.9	160.0	247.7
	Lugaro	1.20	–	–	–	270.0	–	–	–
	Golgi	–	–	–	–	–	–	–	–
	Granule	–	–	–	–	–	–	–	–
Common chimpanzee	Stellate	1.13	0.03	1.07	1.20	86.3	23.0	40.3	132.2
	Basket	1.11	0.02	1.06	1.15	114.6	29.5	55.5	173.7
	Lugaro	1.13	0.04	1.05	1.20	271.8	63.8	144.1	399.4
	Golgi	1.13	0.02	1.09	1.17	285.6	92.5	100.5	470.7
	Granule	1.26	0.17	0.92	1.61	52.9	5.4	42.1	63.7
Giraffe	Stellate	1.16	0.03	1.10	1.23	116.5	25.4	65.8	167.2
	Basket	1.16	0.04	1.07	1.25	153.1	44.2	64.6	241.6
	Lugaro	1.15	0.03	1.08	1.22	271.6	108.7	54.1	489.1
	Golgi	1.16	0.05	1.06	1.26	538.2	131.5	275.3	801.2
	Granule	1.38	0.21	0.96	1.80	68.0	11.3	45.3	90.7
Human	Stellate	1.17	0.03	1.12	1.22	87.0	23.8	39.3	134.7
	Basket	1.16	0.03	1.10	1.23	113.3	20.5	72.2	154.3
	Lugaro	1.12	0.03	1.07	1.17	315.5	153.0	9.5	621.5
	Golgi	1.14	0.02	1.10	1.18	433.1	185.1	63.0	803.3
	Granule	1.51	0.39	0.72	2.29	49.7	6.9	35.9	63.6
Humpback whale	Stellate	1.10	0.04	1.03	1.18	101.8	27.3	47.2	156.4
	Basket	1.10	0.02	1.06	1.14	150.6	52.6	45.4	255.9
	Lugaro	1.12	0.05	1.03	1.22	541.1	336.2	–131.4	1213.5
	Golgi	1.13	0.04	1.06	1.21	495.5	372.6	–249.7	1240.7
	Granule	1.17	0.08	1.01	1.33	63.9	12.0	39.8	88.0
African Elephant	Stellate	1.29	0.14	1.01	1.57	50.7	6.7	37.3	64.2
	Basket	1.15	0.05	1.06	1.24	443.8	189.7	64.3	823.2
	Lugaro	1.13	0.05	1.03	1.23	1353.7	394.7	564.4	2143.1
	Golgi	1.19	0.02	1.14	1.23	736.5	131.9	472.6	1000.3
	Granule	–	–	–	–	–	–	–	–

^aDependent measures are: Volume (Vol, μm^3), Total Dendritic Length (TDL, μm), Mean Segment Length (MSL), Dendritic Segment Count (DSC), Tortuosity (Tor), and Soma Size (μm^2). Species are arranged in from smallest (clouded leopard) to largest (African elephant) in terms of brain mass. L95% = lower95% confidence interval; U95% = upper95% confidence interval. **Bold numbers** represent comparisons that were significantly different from the elephant values; red numbers represent comparisons that were significantly different from the clouded leopard values. See text for further explanation.