

Supplementary Materials:

Male Aggressiveness as Intrasexual Contest Competition in 78 Societies.

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Table S1 Detailed summary of independent variables.

Table S2 Detailed summary of dependent variables.

Table S3 Data. Column headings: (a) Society ID; (b) Society Name; (c) Latitude; (d) Longitude; (e) Male Sexual Aggressiveness; (f) Aggression Valued; (g) Ideology of Male Toughness; (h) Frequent Interpersonal Violence; (i) Wives Taken from Hostile Groups; (j) Warriors Have Prestige; (k) Male Scarification; (l) Male ‘Aggressiveness’ (Behavior and Beliefs Related to Male Aggression; 1st PCA of h-k); (m) Polygyny; (n) Number of Wives (Variance): Upper 50th Percentile; (o) Sex Ratio (M/F): Lower 50th Percentile; (p) Male War Mortality; (q) Males Expend As Much or More Subsistence Effort as Women; (r) Political Complexity; (s) Warfare; (t) Region; (u) DV (Spatial); (v) Polygyny (Spatial); (w) Wives Variance (Spatial); (x) Sex Ratio (Spatial); (y) Male War Mortality (Spatial); and, (z) Male Subsistence (Spatial). Original data available at: <http://eclectic.ss.uci.edu/~drwhite/sccs/>

Table S4 Tetrachoric correlations amongst predictors of interest.

Table S1 Detailed summary of independent variables

Variable	SCCS Variable (v#)	SCCS Coding	Coding	Source ⁴
Polygyny	Polygamy (v79)	1 Polyandry, 2 Monogamy, 3 Polygyny (<20%), 4 Polygyny (>20%)	0 Non-polygynous 1 Polygynous	Murdock & Wilson 1972
Number of Wives (Variance): Upper 50 th %ile	# of Wives (variance) (v2176)	n/a ¹	0 Lower 50 th %ile 1 Upper 50 th %ile	White 1988
Sex Ratio (males to females): Lower 50 th %ile	Sex Ratio (v1689)	n/a ² # males / # females x 1000	0 Upper 50 th %ile 1 Lower 50 th %ile	Ember & Ember 1992
Male War Mortality	None	n/a ³	0 None or negligible 1 More than negligible	n/a ³
Male Subsistence Effort	Relative time and effort expended on subsistence activities (v586)	1 Men clearly more 2 Men and women roughly equal 3 Women clearly more	0 Women more 1 Equal or men more	Whyte 1978
Warfare	Warfare (v679)	1 Absent or occasional or periodic 2 Frequent or endemic	0 Absent or occasional 1 Frequent or endemic	Murdock 1962-71
Political Complexity	Jurisdictional hierarchy beyond the local community (v237)	1 No political authority beyond comm. 2 One level (e.g., petty chiefdoms) 3 Two levels (e.g., larger chiefdoms) 4 Three levels 5 Four levels (e.g., states)	0 no state 1 states	
Region	Region (v200)	1 Africa (exclusive of Madagascar and Sahara) 2 Circum-Mediterr. (N. Africa, Europe, Turkey, Caucasus, Semitic Near East) 3 East Eurasia (including Madagascar and Islands in Indian Ocean) 4 Insular Pacific (including Australia, Indonesia, Formosa, Phillipines) 5 North America (indigenous societies to the Isthmus of Tehuantepec) 6 South America (including Antilles, Yucatan, Central America)		Murdock 1962-71

¹ Variance in number of wives is a continuous variable; percentiles calculated using all non-missing values from entire 186-society sample.

² Sex ratio is a continuous variable calculated as (# of males/ # of females) x 1000; percentiles calculated using all non-missing from entire 186-society sample.

³ Unpublished data on male war mortality provided by Carol Ember. The original was an interval variable ranging from 0 (lowest) to 6 (highest). We recoded it as 0=none or negligible (0 from original) and 1=higher male mortality (1-6 from original). These data were also used by Quinlan and Quinlan (2007).

⁴ References: Ember, C.R., & Ember, M. (1992). Warfare, aggression, and resource problems: cross-cultural codes. *Behavioral Science Research* 26:169-186.
Murdock, G.P., and Wilson, S. F. (1972) Settlement patterns and community organization: cross-cultural codes 3. *Ethnology* 11:254-295.
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Quinlan R, & Quinlan M. 2007. Evolutionary ecology of human pair-bonds: cross-cultural tests of alternative hypotheses. *Cross-Cultural Research* 41:149-69.
 Whyte, M.K. (1978). Cross-cultural codes dealing with the relative status of women. *Ethnology* 17:211-237.
 White, D.R. (1988). Rethinking polygyny: co-wives, codes, and cultural systems. *Current Anthropology* 29:529-559.

Table S2 Detailed summary of dependent variables

Variable	SCCS Variable (v#)	SCCS Coding	Coding	Source ¹
Frequent Interpersonal Violence	Moderate or frequent interpersonal violence (v666)	1 Absent 2 Present	0 Absent 1 Present	Sanday 1981
Warriors Have Prestige	Prestige associated with being a soldier or warrior (v903)	1 Great deal 2 Some 3 None	0 None or some 1 Great deal	Wheeler 1974
Wives Taken From Hostile Groups	Additional wives or concubines from slavery or capture in warfare (v870)	0 No female captives 1 Taken but not married 2 Taken as wives or concubines	0 No female captives 1 Women taken	White 1988
Male Scarification	Scarification, including piercings and tattoos (v1694)	1 No scarification 2 Ear, nose piercing 3 Tattooing and cicatrisation 4 Scarification includes removal of skin	0 Absent 1 Present	Ludvico & Kurland 1995
Aggression Valued	High value placed on males being aggressive, strong, and sexually potent (v625)	1 Marked emphasis 2 Moderate emphasis 3 Little or no emphasis	0 Little 1 Moderate or marked	Whyte 1978
Ideology of Male Toughness	Ideology of male toughness (v664)	1 Absent 2 Present	0 Absent 1 Present	Sanday 1981
Male Sexual Aggressiveness	Male sexual aggressiveness (v175)	1 Men diffident, shy 2 Men sexually forward but not diffident 3 Men forward verbally 4 Men forward physically 5 Men forward; hostile occasionally 6 Men forward; hostile typically	0 Men diffident, shy 1 Men forward, sometimes hostile	Broude & Greene 1976
Male 'Aggressiveness'	--	--	1 st principal component of Frequent Interpersonal Violence, Warriors have Prestige, Wives Taken from Hostile Groups, and Male Scarification	--

¹ References: Broude, G., and Green S.J. (1976). Cross-cultural codes on twenty sexual attitudes and practices. *Ethnology* 15: 409-429.
 Ludvico, L.R., and Kurland, J.A. (1995). Symbolic or not-so-symbolic wounds: the behavioral ecology. *Ethology and Sociobiology* 16:155-172.
 Sanday, P. (1981) *Female power and male dominance: On the origins of sexual inequality*. Cambridge University Press.

- Wheeler, V. (1974). *Drums and guns: A cross-cultural study of the nature of war*. PhD Dissertation, University of Oregon.
- White, D.R. (1988). Rethinking polygyny: co-wives, codes, and cultural systems. *Current Anthropology* 29:529-559.
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a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	x	y	z
1	NamaHottentot	-27.50	17.00			1	0	1	1	-0.273	1			1	1	0	1	1	-1.106	0.703	0.941			0.312	
2	KungBushmen	-19.83	20.58			1	0	0	0	-2.379	1	0		0	0	0	1	-0.322		0.964		0.701	0.738		
3	Thonga	-25.83	32.33	1	1		1	1	1	0.581	1				0	0	1	1	-0.886	0.909	0.935				
8	Nyakuyusa	-9.50	34.00			1	1	0	1	-0.794	1			0	0	1	1	-0.244		0.973			0.505		
11	Kikuyu	-0.67	37.17	1	1	1	1	1	1	0.061	1			1	1	0	1	1	0.061	0.964	0.970			0.425	
12	Ganda	0.33	32.50			1	1	1	1	0.061	1			1	1	1	1	-0.653		0.965			0.601		
13	Mbuti	1.50	28.33	1	0	1	0	0	0	-2.379	1	0			1	0	0	1	0.097	0.915	0.964		0.620		
16	Tiv	7.25	9.00			1	1	1	0	-0.407	1	1				0	1	1	-0.504		0.978		0.924		
18	Fon	7.20	1.91			1	1	1	1	0.581	1					1	1	1	-0.283		0.968				
19	Ashanti	7.00	-1.50			0	1	1	1	0.061	1	1				0	1	1	0.122		0.967		0.937		
20	Mende	7.83	-12.00			1	1	1	1	0.581	1	1	0			0	1	1	-0.601		0.935	0.542	0.828		
21	Wolof	13.75	-15.33		1		1	1	0	-0.928	1			0	0	0	0	2	-0.068	0.778	0.916			0.507	
25	PastoralFulani	15.00	7.50		1	1	0	1	0	-2.045	1	1			1	0		2	-0.347	0.723	0.897		0.910		
28	Azande	5.08	28.25	1		1	1	1	1	0.581	1		0	1		0	1	1	-1.254		0.956	0.467		0.790	
30	OtoroNuba	11.33	30.67	1		1	0	1	1	-0.536	1	1				0	1	1	-0.596		0.951		0.485		
34	Masai	-3.50	36.75			1	1	1	1	0.581	1	1				0	1	1	-0.241		0.986		0.044		
37	Amhara	12.50	37.75	1	1	1	0	0	1	-1.391	0				1	1	1	2	-0.545	0.955	0.972				
40	Teda	20.50	17.50			1	1	1	1	0.581	1	1				0	1	2	-0.866		0.856		0.691		
41	Tuareg	23.00	6.50	1	1	1	0	1	1	-1.057	0			1	1	0	1	2	-0.694	0.804	0.912			0.493	
42	Riffians	34.92	-3.25			1	1	0	1	-0.273	1	0				0	1	2	-0.733		0.640		0.729		
43	Egyptians	24.75	33.00	0	1	1	1	0	0	-1.782	1	0	0		1	1	0	2	-0.553	0.898	0.893	0.254	0.646		
46	RwalaBedouin	33.25	38.50	1		1	1	0	1	-0.273	1			1		0	1	2	-0.718		0.888			0.391	
48	GhegAlbanians	42.00	20.17			1	1	0	1	-0.273	1			1		0	1	2	-0.807		0.548			0.517	
52	Lapps	68.70	21.50			0	0	0	0	-2.899	0			0	0	0	0	2	-1.405		0.746			0.723	
53	YurakSamoyed	68.00	51.50			1	0	0	0	-2.899	1			1	1	0		3	-1.449	0.806	0.608			0.482	
57	Kurd	36.50	44.50		1	1	1	0	1	-0.273	1				1	0	1	2	-0.653	0.755	0.673				
62	Santal	23.50	87.17			0	0	0	0	-2.379	1		1	0		0		3	-2.321		0.749	0.362		0.333	
67	Lolo	27.50	103.50		1		1	1	1	0.061	1			1	1	0	1	3	-1.688	0.901	0.662			0.664	
68	Lepcha	27.50	89.00	1		0	0	0	0	-2.899	1	0		0		0	0	3	-1.914		0.832		0.019	0.208	
76	Siamese	14.00	100.85	1		0	0	0	0	-2.379	1		1			1	0	3	-1.251		0.754	0.408			
80	Vedda	7.75	81.25			0	0	0	0	-2.899	0			0		0	0	3	-1.325		0.579			0.266	
84	Balinese	-8.50	115.33			0	0	0	0	-2.899	0		0			1	0	4	-0.820		0.886	0.540			
85	Iban	2.00	113.00	1	1	1	0	0	1	-1.391	0			0	1	0	1	4	-1.413	0.840	0.771			0.546	
90	Tiwi	-11.38	131.00			0	1	1	1	0.581	1		0	1		0	0	4	-0.828		0.857	0.464		0.220	
91	Aranda	-24.25	133.50			1	1	1	1	0.581	1	1			0	0	1	4	-0.648	0.748	0.849		0.262		
92	Orokaiva	-8.50	148.00	1		1	1	1	1	0.061	1					0	1	4	-0.868		0.966				
95	Kwoma	-4.17	142.67	1	1	1	1	0	1	-0.273	1	1	1	1	1	0	1	4	-1.006	0.795	0.939	0.573	0.070	0.113	
96	Manus	-2.17	147.17	1		1	1	0	0	-1.782	1		1	0		0	0	4	-0.510		0.955	0.470		0.339	
98	Trobrianders	-8.64	151.01	1		1	0	1	0	-0.794	1			0		0	0	4	-0.300		0.970			0.265	
100	Tikopia	-12.50	168.50	1		1	1	0	0	-1.262	1		1	0		0	0	4	-0.618		0.965	0.687		0.489	
102	MbauFijians	-18.00	178.58			1	1	1	0	-0.407	1					0	1	4	-0.689		0.933				
104	Maori	-35.33	174.17			1	1	1	1	0.581	1	0		1		0	1	4	-0.735		0.897		0.560	0.467	
105	Marquesans	-8.92	-140.17		1		1	0	0	-1.262	0		1	1	1	0	1	4	-0.808	0.755	0.873	0.533		0.568	
106	WesternSamoans	-13.75	-172.00	1		1	1	0	1	-0.407	1			1		0	1	4	-0.663		0.900			0.478	
109	Trukese	7.40	151.67	1	0	1	0	0	0	-2.379	1		1		1	0	1	4	-0.821	0.729	0.886	0.624			
110	Yapese	9.50	138.17			1	1	1	0	-0.407	1		1			0	1	4	-1.026		0.860	0.562			
112	Ifugao	16.83	121.17	1		1	0	1	1	-0.273	1			1		0	1	4	-1.120		0.581			0.630	
118	Ainu	42.83	143.00			1	1	0	0	-0.928	1		0			0	1	3	-0.948		0.567	0.530			
119	Gilyak	54.00	142.50		1	1	1	1	0	-0.928	1	0			1	0	1	3	-0.948	0.812	0.584		0.400		
120	Yukaghir	64.75	153.50	1		1	1	1	0	-0.928	0		1			0		3	-0.915		0.804	0.376			
122	Ingalik	62.50	-159.50	1		1	1	0	1	-0.407	1			1		0	1	5	-0.471		0.880			0.635	
123	Aleut	55.25	-164.00		1	1	1	1	1	0.581	1		0	1	1	0	1	5	-0.804	0.676	0.870	0.600		0.703	
124	CopperEskimo	68.00	-112.50			0	0	0	0	-2.899	1		1	0		0	0	5	-0.751		0.716	0.585		0.364	
125	Montagnais	50.00	-74.00		1		1	0	0	-1.262	1			0	1	0	0	5	-0.568	0.740	0.699			0.771	
129	Kaska	60.00	-131.00	1	1	1	1	1	0	-0.407	1		1	0	1	0	0	5	-1.174	0.801	0.729	0.659		0.401	
134	Yurok	41.50	-124.00			1	0	0	0	-2.379	1		0	1		0	0	5	-1.278		0.977	0.087		0.936	
135	Pomo(Eastern)	39.00	-123.00		0		1	0	0	-1.262	1			1	1	0	0	5	-2.005	0.519	0.964			0.881	
136	Yokuts(Lake)	35.00	-119.50			0	0	0	0	-2.899	1					0	0	5	-1.215		0.916				
137	Paiute(North.)	43.50	-119.00	1	0	1	1	0	0	-1.262	1	0			0	0	0	5	-1.547	0.762	0.967		0.799		
140	GrosVentre	48.00	-108.00	0			0	1	1	-0.536	1					0	1	5	-0.789		0.924				
141	Hidatsa	47.00	-101.00	1	1	1	1	1	0	-0.407	1	1			1	0	1	5	-0.563	0.765	0.925		0.736		
143	Omaha	41.43	-96.50		1	1	1	1	1	0.581	1	1		1	1	0	1	5	-0.686	0.683	0.931		0.748	0.558	
144	Huron	44.50	-79.00	1		1	1	0	1	-0.273	0			1		0	1	5	-0.865		0.926			0.450	
145	Creek	32.93	-86.00		1	1	1	0	1	-0.273	1	0		1	0	0	1	5	-0.987	0.766	0.884		0.752	0.772	
146	Natchez	31.50	-91.42			1	0	1	0	-1.525	1			1		0	1	5	-0.374		0.897			0.760	
147	Comanche	34.00	-101.50	0	1	1	1	1	1	0.581	1	1			0	0	1	5	-0.848	0.849	0.827		0.639		
148	Chiricahua	32.00	-109.50			1	0	1	1	-0.273	1					0	1	5	-1.283		0.834				
150	Havasupai	35.83	-112.17	0			0	1	0	-1.525	1		1	0		0	0	5	-1.099		0.671	0.195		0.400	
151	Papago	32.00	-112.00	1	1	1	0	0	1	-1.391	1			0	1	0	1	5	-0.714	0.764	0.882			0.3	

Table S4 Tetrachoric correlations amongst predictors of interest

	<i>Polygyny:</i>		<i>Sex Ratio:</i>		<i>Other Factors:</i>
	Polygynous	Wives (Variance): Upper 50 th %ile	Sex Ratio: Lower 50 th %ile	Male War Mortality	Male Subsistence Effort
<i>Polygyny:</i>					
Polygynous	--	See note ¹	$\varrho = -0.14$ n= 59 p= 0.75	$\varrho = -0.16$ n= 80 p= 0.44	$\varrho = -0.40$ n= 88 p= 0.17
Wives (Variance): Upper 50 th %ile	--	--	$\varrho = -0.26$ n= 10 p= 1.00	$\varrho = 0.82$ n= 16 p= 0.04	$\varrho = -0.09$ n= 27 p= 1.00
<i>Sex Ratio:</i>					
Sex Ratio: Lower 50 th %ile	--	--	--	$\varrho = -0.03$ n= 27 p= 1.00	$\varrho = 0.27$ n= 26 p= 0.67
Male Mortality from War	--	--	--	--	$\varrho = 0.04$ n= 38 p= 1.00
<i>Other Factors:</i>					
Male Subsistence Effort	--	--	--	--	--

¹ We could not calculate the correlation between the two polygyny predictors because there are no cases of non-polygynous societies in the upper 50th %ile for variance in number of wives