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**Amy O. PARKINSON****Employment**

Academic Associate, PhD Student, Nottingham Trent University, School of Science and Technology, Clifton Lane, Nottingham, UK

Degree

MSc

Research interests

Athlete monitoring and strength asymmetry.

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**Charlotte L. APPS****Employment**

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Research interests

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**Cleveland T. BARNETT****Employment**

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Research interests

Adaptations, control strategies and fundamental functioning of gait, balance and postural control. A particular focus at present is on lower limb amputation.

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**Martin G. C. LEWIS****Employment**

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Research interests

Musculoskeletal modelling and biomechanical simulation of human movement

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Supplementary Material

Table S1. Worked examples of hypothetical asymmetry scores for each index calculation across three scenarios: 1) limb symmetry, where A=B, 2) limb asymmetry, where A>B, or 3) limb asymmetry where A<B. Hypothetical peak torque values of 1.0Nm.kg⁻¹, 1.2Nm.kg⁻¹ and 0.8Nm.kg⁻¹ were used.

Index no.	Index Calculation	Scenario	Limb Comparison				
			Involved/Uninvolved	Dominant/Nondominant	Right/Left	Stronger/Weaker	Stance/Skill
1	$\frac{B}{A} \cdot 100$	1	$\frac{1.0}{1.0} \cdot 100 = 100\%$	$\frac{1.0}{1.0} \cdot 100 = 100\%$	$\frac{1.0}{1.0} \cdot 100 = 100\%$	$\frac{1.0}{1.0} \cdot 100 = 100\%$	$\frac{1.0}{1.0} \cdot 100 = 100\%$
		2	$\frac{0.8}{1.2} \cdot 100 = 66.7\%$	$\frac{0.8}{1.2} \cdot 100 = 66.7\%$	$\frac{0.8}{1.2} \cdot 100 = 66.7\%$	$\frac{0.8}{1.2} \cdot 100 = 66.7\%$	$\frac{0.8}{1.2} \cdot 100 = 66.7\%$
		3	$\frac{1.2}{0.8} \cdot 100 = 150\%$	$\frac{1.2}{0.8} \cdot 100 = 150\%$	$\frac{1.2}{0.8} \cdot 100 = 150\%$	$\frac{0.8}{1.2} \cdot 100 = 66.7\%$	$\frac{1.2}{0.8} \cdot 100 = 150\%$
2	$\frac{A}{B} \cdot 100$	1	$\frac{1.0}{1.0} \cdot 100 = 100\%$	$\frac{1.0}{1.0} \cdot 100 = 100\%$	$\frac{1.0}{1.0} \cdot 100 = 100\%$	$\frac{1.0}{1.0} \cdot 100 = 100\%$	$\frac{1.0}{1.0} \cdot 100 = 100\%$
		2	$\frac{1.2}{0.8} \cdot 100 = 150\%$	$\frac{1.2}{0.8} \cdot 100 = 150\%$	$\frac{1.2}{0.8} \cdot 100 = 150\%$	$\frac{1.2}{0.8} \cdot 100 = 150\%$	$\frac{1.2}{0.8} \cdot 100 = 150\%$
		3	$\frac{0.8}{1.2} \cdot 100 = 66.7\%$	$\frac{0.8}{1.2} \cdot 100 = 66.7\%$	$\frac{0.8}{1.2} \cdot 100 = 66.7\%$	$\frac{1.2}{0.8} \cdot 100 = 150\%$	$\frac{0.8}{1.2} \cdot 100 = 66.7\%$
3	$\left[1 - \left(\frac{B}{A}\right)\right] \cdot 100$	1	$\left[1 - \left(\frac{1.0}{1.0}\right)\right] \cdot 100 = 0\%$	$\left[1 - \left(\frac{1.0}{1.0}\right)\right] \cdot 100 = 0\%$	$\left[1 - \left(\frac{1.0}{1.0}\right)\right] \cdot 100 = 0\%$	$\left[1 - \left(\frac{1.0}{1.0}\right)\right] \cdot 100 = 0\%$	$\left[1 - \left(\frac{1.0}{1.0}\right)\right] \cdot 100 = 0\%$
		2	$\left[1 - \left(\frac{0.8}{1.2}\right)\right] \cdot 100 = 33.3\%$	$\left[1 - \left(\frac{0.8}{1.2}\right)\right] \cdot 100 = 33.3\%$	$\left[1 - \left(\frac{0.8}{1.2}\right)\right] \cdot 100 = 33.3\%$	$\left[1 - \left(\frac{0.8}{1.2}\right)\right] \cdot 100 = 33.3\%$	$\left[1 - \left(\frac{0.8}{1.2}\right)\right] \cdot 100 = 33.3\%$
		3	$\left[1 - \left(\frac{1.2}{0.8}\right)\right] \cdot 100 = -50\%$	$\left[1 - \left(\frac{1.2}{0.8}\right)\right] \cdot 100 = -50\%$	$\left[1 - \left(\frac{1.2}{0.8}\right)\right] \cdot 100 = -50\%$	$\left[1 - \left(\frac{0.8}{1.2}\right)\right] \cdot 100 = 33.3\%$	$\left[1 - \left(\frac{1.2}{0.8}\right)\right] \cdot 100 = -50\%$
4	$100 - \left[\left(\frac{B}{A}\right) \cdot 100\right]$	1	$100 - \left[\left(\frac{1.0}{1.0}\right) \cdot 100\right] = 0\%$	$100 - \left[\left(\frac{1.0}{1.0}\right) \cdot 100\right] = 0\%$	$100 - \left[\left(\frac{1.0}{1.0}\right) \cdot 100\right] = 0\%$	$100 - \left[\left(\frac{1.0}{1.0}\right) \cdot 100\right] = 0\%$	$100 - \left[\left(\frac{1.0}{1.0}\right) \cdot 100\right] = 0\%$
		2	$100 - \left[\left(\frac{0.8}{1.2}\right) \cdot 100\right] = 33.3\%$	$100 - \left[\left(\frac{0.8}{1.2}\right) \cdot 100\right] = 33.3\%$	$100 - \left[\left(\frac{0.8}{1.2}\right) \cdot 100\right] = 33.3\%$	$100 - \left[\left(\frac{0.8}{1.2}\right) \cdot 100\right] = 33.3\%$	$100 - \left[\left(\frac{0.8}{1.2}\right) \cdot 100\right] = 33.3\%$
		3	$100 - \left[\left(\frac{1.2}{0.8}\right) \cdot 100\right] = -50\%$	$100 - \left[\left(\frac{1.2}{0.8}\right) \cdot 100\right] = -50\%$	$100 - \left[\left(\frac{1.2}{0.8}\right) \cdot 100\right] = -50\%$	$100 - \left[\left(\frac{0.8}{1.2}\right) \cdot 100\right] = 33.3\%$	$100 - \left[\left(\frac{1.2}{0.8}\right) \cdot 100\right] = -50\%$
5	$\frac{100}{A} \cdot B \cdot (-1) + 100$	1	$\frac{100}{1.0} \cdot 1.0 \cdot (-1) + 100 = 0\%$	$\frac{100}{1.0} \cdot 1.0 \cdot (-1) + 100 = 0\%$	$\frac{100}{1.0} \cdot 1.0 \cdot (-1) + 100 = 0\%$	$\frac{100}{1.0} \cdot 1.0 \cdot (-1) + 100 = 0\%$	$\frac{100}{1.0} \cdot 1.0 \cdot (-1) + 100 = 0\%$
		2	$\frac{100}{1.2} \cdot 0.8 \cdot (-1) + 100 = 33.3\%$	$\frac{100}{1.2} \cdot 0.8 \cdot (-1) + 100 = 33.3\%$	$\frac{100}{1.2} \cdot 0.8 \cdot (-1) + 100 = 33.3\%$	$\frac{100}{1.2} \cdot 0.8 \cdot (-1) + 100 = 33.3\%$	$\frac{100}{1.2} \cdot 0.8 \cdot (-1) + 100 = 33.3\%$
		3	$\frac{100}{0.8} \cdot 1.2 \cdot (-1) + 100 = -50\%$	$\frac{100}{0.8} \cdot 1.2 \cdot (-1) + 100 = -50\%$	$\frac{100}{0.8} \cdot 1.2 \cdot (-1) + 100 = -50\%$	$\frac{100}{1.2} \cdot 0.8 \cdot (-1) + 100 = 33.3\%$	$\frac{100}{0.8} \cdot 1.2 \cdot (-1) + 100 = -50\%$
6	$\frac{A}{B}$	1	$\frac{1.0}{1.0} = 1$	$\frac{1.0}{1.0} = 1$	$\frac{1.0}{1.0} = 1$	$\frac{1.0}{1.0} = 1$	$\frac{1.0}{1.0} = 1$
		2	$\frac{1.2}{0.8} = 1.5$	$\frac{1.2}{0.8} = 1.5$	$\frac{1.2}{0.8} = 1.5$	$\frac{1.2}{0.8} = 1.5$	$\frac{1.2}{0.8} = 1.5$
		3	$\frac{0.8}{1.2} = 0.7$	$\frac{0.8}{1.2} = 0.7$	$\frac{0.8}{1.2} = 0.7$	$\frac{1.2}{0.8} = 1.5$	$\frac{0.8}{1.2} = 0.7$

7	$\frac{(A - B)}{A} \cdot 100$	1	$\frac{(1.0 - 1.0)}{1.0} \cdot 100 = 0\%$	$\frac{(1.0 - 1.0)}{1.0} \cdot 100 = 0\%$	$\frac{(1.0 - 1.0)}{1.0} \cdot 100 = 0\%$	$\frac{(1.0 - 1.0)}{1.0} \cdot 100 = 0\%$	$\frac{(1.0 - 1.0)}{1.0} \cdot 100 = 0\%$
		2	$\frac{(1.2 - 0.8)}{1.2} \cdot 100 = 33.3\%$	$\frac{(1.2 - 0.8)}{1.2} \cdot 100 = 33.3\%$	$\frac{(1.2 - 0.8)}{1.2} \cdot 100 = 33.3\%$	$\frac{(1.2 - 0.8)}{1.2} \cdot 100 = 33.3\%$	$\frac{(1.2 - 0.8)}{1.2} \cdot 100 = 33.3\%$
		3	$\frac{(0.8 - 1.2)}{0.8} \cdot 100 = -50\%$	$\frac{(0.8 - 1.2)}{0.8} \cdot 100 = -50\%$	$\frac{(0.8 - 1.2)}{0.8} \cdot 100 = -50\%$	$\frac{(1.2 - 0.8)}{1.2} \cdot 100 = 33.3\%$	$\frac{(0.8 - 1.2)}{0.8} \cdot 100 = -50\%$
8	$\frac{(B - A)}{A} \cdot 100$	1	$\frac{(1.0 - 1.0)}{1.0} \cdot 100 = 0\%$	$\frac{(1.0 - 1.0)}{1.0} \cdot 100 = 0\%$	$\frac{(1.0 - 1.0)}{1.0} \cdot 100 = 0\%$	$\frac{(1.0 - 1.0)}{1.0} \cdot 100 = 0\%$	$\frac{(1.0 - 1.0)}{1.0} \cdot 100 = 0\%$
		2	$\frac{(0.8 - 1.2)}{1.2} \cdot 100 = -33.3\%$	$\frac{(0.8 - 1.2)}{1.2} \cdot 100 = -33.3\%$	$\frac{(0.8 - 1.2)}{1.2} \cdot 100 = -33.3\%$	$\frac{(0.8 - 1.2)}{1.2} \cdot 100 = -33.3\%$	$\frac{(0.8 - 1.2)}{1.2} \cdot 100 = -33.3\%$
		3	$\frac{(1.2 - 0.8)}{0.8} \cdot 100 = 50\%$	$\frac{(1.2 - 0.8)}{0.8} \cdot 100 = 50\%$	$\frac{(1.2 - 0.8)}{0.8} \cdot 100 = 50\%$	$\frac{(0.8 - 1.2)}{1.2} \cdot 100 = -33.3\%$	$\frac{(1.2 - 0.8)}{0.8} \cdot 100 = 50\%$
9	$\frac{(A - B)}{\text{Max}(A, B)} \cdot 100$	1	$\frac{(1.0 - 1.0)}{1.0} \cdot 100 = 0\%$	$\frac{(1.0 - 1.0)}{1.0} \cdot 100 = 0\%$	$\frac{(1.0 - 1.0)}{1.0} \cdot 100 = 0\%$	$\frac{(1.0 - 1.0)}{1.0} \cdot 100 = 0\%$	$\frac{(1.0 - 1.0)}{1.0} \cdot 100 = 0\%$
		2	$\frac{(1.2 - 0.8)}{1.2} \cdot 100 = 33.3\%$	$\frac{(1.2 - 0.8)}{1.2} \cdot 100 = 33.3\%$	$\frac{(1.2 - 0.8)}{1.2} \cdot 100 = 33.3\%$	$\frac{(1.2 - 0.8)}{1.2} \cdot 100 = 33.3\%$	$\frac{(1.2 - 0.8)}{1.2} \cdot 100 = 33.3\%$
		3	$\frac{(0.8 - 1.2)}{1.2} \cdot 100 = -33.3\%$	$\frac{(0.8 - 1.2)}{1.2} \cdot 100 = -33.3\%$	$\frac{(0.8 - 1.2)}{1.2} \cdot 100 = -33.3\%$	$\frac{(1.2 - 0.8)}{1.2} \cdot 100 = 33.3\%$	$\frac{(0.8 - 1.2)}{1.2} \cdot 100 = -33.3\%$
10	$\frac{(A - B)}{(A + B)} \cdot 100$	1	$\frac{(1.0 - 1.0)}{(1.0 + 1.0)} \cdot 100 = 0\%$	$\frac{(1.0 - 1.0)}{(1.0 + 1.0)} \cdot 100 = 0\%$	$\frac{(1.0 - 1.0)}{(1.0 + 1.0)} \cdot 100 = 0\%$	$\frac{(1.0 - 1.0)}{(1.0 + 1.0)} \cdot 100 = 0\%$	$\frac{(1.0 - 1.0)}{(1.0 + 1.0)} \cdot 100 = 0\%$
		2	$\frac{(1.2 - 0.8)}{(1.2 + 0.8)} \cdot 100 = 20\%$	$\frac{(1.2 - 0.8)}{(1.2 + 0.8)} \cdot 100 = 20\%$	$\frac{(1.2 - 0.8)}{(1.2 + 0.8)} \cdot 100 = 20\%$	$\frac{(1.2 - 0.8)}{(1.2 + 0.8)} \cdot 100 = 20\%$	$\frac{(1.2 - 0.8)}{(1.2 + 0.8)} \cdot 100 = 20\%$
		3	$\frac{(0.8 - 1.2)}{(0.8 + 1.2)} \cdot 100 = -20\%$	$\frac{(0.8 - 1.2)}{(0.8 + 1.2)} \cdot 100 = -20\%$	$\frac{(0.8 - 1.2)}{(0.8 + 1.2)} \cdot 100 = -20\%$	$\frac{(1.2 - 0.8)}{(1.2 + 0.8)} \cdot 100 = 20\%$	$\frac{(0.8 - 1.2)}{(0.8 + 1.2)} \cdot 100 = -20\%$
11	$\frac{[45 - \arctan(B/A)]}{90} \cdot 100$	1	$\frac{[45 - \arctan(1.0/1.0)]}{90} \cdot 100 = 0\%$	$\frac{[45 - \arctan(1.0/1.0)]}{90} \cdot 100 = 0\%$	$\frac{[45 - \arctan(1.0/1.0)]}{90} \cdot 100 = 0\%$	$\frac{[45 - \arctan(1.0/1.0)]}{90} \cdot 100 = 0\%$	$\frac{[45 - \arctan(1.0/1.0)]}{90} \cdot 100 = 0\%$
		2	$\frac{[45 - \arctan(0.8/1.2)]}{90} \cdot 100 = 12.6\%$	$\frac{[45 - \arctan(0.8/1.2)]}{90} \cdot 100 = 12.6\%$	$\frac{[45 - \arctan(0.8/1.2)]}{90} \cdot 100 = 12.6\%$	$\frac{[45 - \arctan(0.8/1.2)]}{90} \cdot 100 = 12.6\%$	$\frac{[45 - \arctan(0.8/1.2)]}{90} \cdot 100 = 12.6\%$
		3	$\frac{[45 - \arctan(1.2/0.8)]}{90} \cdot 100 = -12.6\%$	$\frac{[45 - \arctan(1.2/0.8)]}{90} \cdot 100 = -12.6\%$	$\frac{[45 - \arctan(1.2/0.8)]}{90} \cdot 100 = -12.6\%$	$\frac{[45 - \arctan(0.8/1.2)]}{90} \cdot 100 = 12.6\%$	$\frac{[45 - \arctan(1.2/0.8)]}{90} \cdot 100 = -12.6\%$
12	$\ln\left(\frac{B}{A}\right) \cdot 100$	1	$\ln\left(\frac{1.0}{1.0}\right) \cdot 100 = 0\%$	$\ln\left(\frac{1.0}{1.0}\right) \cdot 100 = 0\%$	$\ln\left(\frac{1.0}{1.0}\right) \cdot 100 = 0\%$	$\ln\left(\frac{1.0}{1.0}\right) \cdot 100 = 0\%$	$\ln\left(\frac{1.0}{1.0}\right) \cdot 100 = 0\%$
		2	$\ln\left(\frac{0.8}{1.2}\right) \cdot 100 = -40.5\%$	$\ln\left(\frac{0.8}{1.2}\right) \cdot 100 = -40.5\%$	$\ln\left(\frac{0.8}{1.2}\right) \cdot 100 = -40.5\%$	$\ln\left(\frac{0.8}{1.2}\right) \cdot 100 = -40.5\%$	$\ln\left(\frac{0.8}{1.2}\right) \cdot 100 = -40.5\%$
		3	$\ln\left(\frac{1.2}{0.8}\right) \cdot 100 = 40.5\%$	$\ln\left(\frac{1.2}{0.8}\right) \cdot 100 = 40.5\%$	$\ln\left(\frac{1.2}{0.8}\right) \cdot 100 = 40.5\%$	$\ln\left(\frac{0.8}{1.2}\right) \cdot 100 = -40.5\%$	$\ln\left(\frac{1.2}{0.8}\right) \cdot 100 = 40.5\%$

Limb A = uninvolved, dominant, right, stronger, or stance limb value, and Limb B = involved, nondominant, left, weaker, or skill limb value