INCLINATION OF LONGITUDINAL AXIS OF PALMARPRINT WITH INTERTRIRADIAL DISTANCE a-d, PMPC, AND DWC

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The wide fluctuations of the three angular measurements, a-d, PMPC, and DWC with longitudinal axis make palmar projective breadth (PB) the ideal standard axis for any work involving the quantitative estimates of longitudinal and transverse trends of palmar triradii.

Several papers to date (Sharma and Taneja 1968*a* and *b*, Sharma and Sapra 1968) have attempted to establish that taking palmarprints in the " adducted " position of digital spreading leads to elimination of error to a maximum degree in quantitative palmar dermatoglyphics. However, another problem that has been little investigated so far concerns the use of a standard axis to be employed primarily for a quantitative assessment of the anatomical position of the axial triradius and of the four digital triradii d, c, b, a, Intertriradial distance a-d (Cummins et al. 1931, Shrivastava 1964, Sharma 1966) is not entirely satisfactory, so that Taneja (1968) had made use of several indices proposed by Sharma (1966) after replacing a-d with palmar " projective breadth " taken between the most radial (R) and ulnar (U) landmarks of the II and IV proximalmost metacarpo-phalangeal crease (PMPC), taken rectilinearly to the " projective length " of the palmarprint. Aiming to finding out to what extent a-d, PMPC or DWC can profitably be used in quantitative estimates in longitudinal and transverse trends of axial triradius, or if palmar " projective breadth " should be preferred, bilateral prints of 100 non-Jat Sikhs and 50 Punjabi Khatris and Aroras have been examined. The longitudinal axis has been determined at an eye estimate using a drawing of anatomical axis in the human hand as shown by Cummins and Midlo (1961). Projective length (PL) and breadth (PB) are clearly shown in the Figure as rectilinear measurements.

As shown in the Table, the analysis of the respective angles clearly reveals the morphologically fluctuating nature of a-d as well as of PMPC and DWC with the longitudinal axis. For all three angles the range of fluctuation is much too wide for these (including Chattopadhyay's) to be used as a standard reference axis in quantitative work concerned with anatomical localization of palmar triradii. Either PL or PB should instead be used, the interpersonal difference being here confined to about $\pm 2°$ caused by the eye estimate in marking longitudinal axis on the palmarprint.

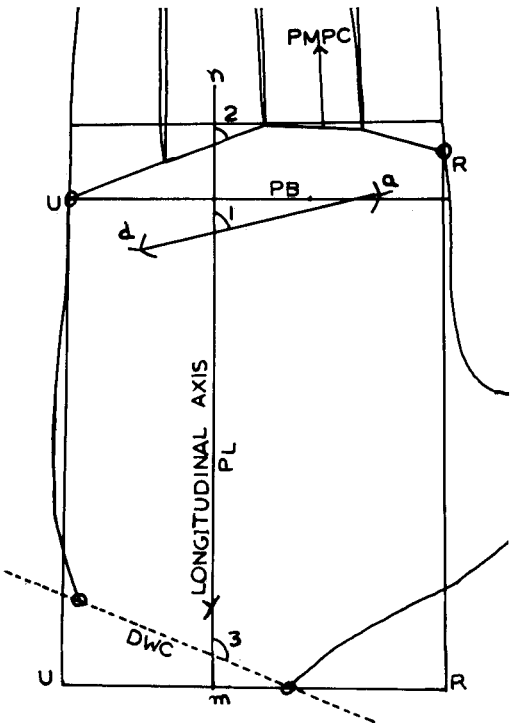

Figure. Diagrammatic representation of angles formed by intertriradial distance *ad*, PMPC and DWC with longitudinal axis.

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Table. *Statistical constants for angular difference of ad, PMPC and DWC with longitudinal axis of palmarprint*

Angle (all three angles open disto-radially)	Hand		Non-Jat Sikh (N = 100)	Punjabi Khatri-Arora (N = 50)	Pooled (N = 150)
Between longitudinal axis and a-d	R	Mean	87.60 ± 0.37	86.06 ± 0.41	
		SD	3.78 ± 0.26	3.71 ± 0.37	
		Range	76° — 97°	79° — 94°	
	L	Mean	87.83 ± 0.36	86.38 ± 0.45	
		SD	3.62 ± 0.25	3.17 ± 0.31	
		Range	76° — 98°	78° — 92°	
	R + L	Mean	88.33 ± 0.27	86.72 ± 0.34	86.99 ± 0.24
		SD	3.87 ± 0.14	3.43 ± 0.24	3.79 ± 0.16
		Range	76° — 98°	78° — 94°	76° — 98°
Between longitudinal axis and PMPC of digit IV	R	Mean	96.03 ± 0.61		
		SD	6.18 ± 0.43		
		Range	84° — 112°		
	L	Mean	96.29 ± 0.62		
		SD	6.23 ± 0.44		
		Range	85° — 114°		
	R + L	Mean	95.76 ± 0.59		
		SD	8.33 ± 0.42		
		Range	84° — 114°		
Between longitudinal axis and DWC	R	Mean		104.60 ± 0.65	
		SD		4.64 ± 0.46	
		Range		94° — 112°	
	L	Mean		100.18 ± 0.62	
		SD		4.40 ± 0.44	
		Range		90° — 110°	
	R + L	Mean		102.27 ± 0.52	
		SD		5.17 ± 0.36	
		Range		90° — 112°	

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