西藏藏族起源初探
——来自掌纹的线索
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摘要: 本文采用分层整群抽样的调查方法捺印1183名藏族青少年的掌纹, 分析掌纹参数, 然后与其他56个群体的掌纹参数进行聚类分析, 进而从肤纹学角度探讨藏族的起源。发现藏族指纹以斗型纹为主(52.89%), 其次为箕型纹(42.95%), 弓形纹出现频率最低(4.16%); 总指嵴线计数为139.01, 其中男性为144.75, 女性为133.87; atd角在男性为42.95°, 女性为43.28°。掌纹参数聚类分析显示: 藏族与汉族和氐羌氏族的后裔(门巴族、普米族、羌族等)等我国北方人群聚在一起。因而从肤纹学角度推断藏族与汉族和氐羌氏族的亲缘关系较近, 而与印度人和孟加拉人的亲缘关系较远。

关键词: 藏族; 起源; 掌纹; 指纹

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1 前言


藏族是我国古老的民族之一, 属汉藏语系藏缅语族藏语支, 生活在海拔3500米以上的青藏高原上, 分布在东经78.3°—104.5°、北纬26.8°—39.3°区域。关于这个古老民族的起源问题一直为众多学者所争论。特有的高原环境和相对闭塞的种群交流造就了西藏藏族人
2.1 Experimental Object and Method

2.1.1 Experimental Object

The research sample was obtained by a stratified cluster sampling method. Informed consent was obtained, and samples were randomly selected from the 6th grade students of the 6th, 7th, and 8th grades in the Lhasa City Primary School, with the condition that both parents are of Tibetan origin, have lived in Tibet their entire lives, and are healthy. The sample was then divided into groups according to gender and age, with each age group consisting of 7-8 years, 9-10 years, 11-12 years, 13-14 years, 15-16 years, 17-18 years, 19-20 years, and 21-22 years. A total of 1183 cases were surveyed, as shown in Table 1.

<table>
<thead>
<tr>
<th>Year Group</th>
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<th>Female</th>
<th>Total</th>
</tr>
</thead>
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<td>55</td>
<td>97</td>
</tr>
<tr>
<td>9-10</td>
<td>43</td>
<td>48</td>
<td>91</td>
</tr>
<tr>
<td>11-12</td>
<td>36</td>
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<td>13-14</td>
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<td>83</td>
</tr>
<tr>
<td>15-16</td>
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<td>80</td>
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<td>17-18</td>
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<td>19-20</td>
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<td>40</td>
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<tr>
<td>21-22</td>
<td>44</td>
<td>49</td>
<td>93</td>
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<tr>
<td>Total</td>
<td>548</td>
<td>635</td>
<td>1183</td>
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2.1.2 Method

The palm prints were taken using a palm print捺盒 (Wuxi Fanying Police Equipment Co., Ltd.), following the method of Zhang Haoguo. The parameters of palm prints were evaluated. Various types of palm prints were counted using the SPSS 11.5 software package, and statistical analysis such as t-test and cluster analysis was performed.

3 Experimental Results

3.1 Tibetan Palm Print Parameters

The dominant palm print type of the Tibetan population was the batty type (52.89%), followed by箕型纹 (42.95%) and 弓型纹 (4.16%). 在所有纹型中, Ws出现频率最高 (47.2%), 其次是Lu (36.2%)，As出现频率最低 (0.6%)。Ws多见于拇指和食指和环指，Lu多见于小指和中指，而男性多见于食指 (7.2%)，而女性多见于环指并且出现频率很高 (63.6%)。

<table>
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<tr>
<td>A.ts</td>
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<td>423 (3.6)</td>
<td>846 (7.2)</td>
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<tr>
<td>L.s</td>
<td>1943 (35.5)</td>
<td>2339 (36.8)</td>
<td>4282 (36.2)</td>
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<tr>
<td>L.t</td>
<td>182 (3.3)</td>
<td>617 (9.7)</td>
<td>799 (6.8)</td>
</tr>
<tr>
<td>W'</td>
<td>2890 (52.7)</td>
<td>2699 (42.5)</td>
<td>5589 (47.2)</td>
</tr>
<tr>
<td>W.s</td>
<td>340 (6.2)</td>
<td>328 (5.2)</td>
<td>668 (5.6)</td>
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<td>5081</td>
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<td>L(s)</td>
<td>0.18</td>
<td>0.46</td>
<td>0.46</td>
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藏族的总指嵴线计数（表 4）为 139.01，其中男性为 144.75，女性为 133.87，低于汪宪平的研究结果（平均为 143.62，男性 147.22，女性 140.01），考虑原因可能是指纹嵴线的计数方法不同所导致的。本文对斗形纹的嵴线的计数按取大舍小原则，以大数参加总指嵴线计数。

总指嵴线计数、ab 嵴线计数、ad 嵴线计数、td 嵴线计数均表现男性大于女性，且总指嵴线计数、td 嵴线计数男女间比较有显著性差异（P < 0.01）。

<table>
<thead>
<tr>
<th>性别</th>
<th>TFRC (X ± SD)</th>
<th>ab-FRC (X ± SD)</th>
<th>ad-FRC (X ± SD)</th>
<th>td-FRC (X ± SD)</th>
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</thead>
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<tr>
<td>男左</td>
<td>72.73 ± 18.82</td>
<td>38.45 ± 6.51</td>
<td>84.10 ± 17.60</td>
<td>93.89 ± 15.96</td>
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<tr>
<td>男右</td>
<td>72.02 ± 17.46</td>
<td>38.27 ± 6.83</td>
<td>82.82 ± 17.69</td>
<td>95.54 ± 16.01</td>
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<tr>
<td>女左</td>
<td>66.23 ± 18.35</td>
<td>37.85 ± 6.98</td>
<td>84.12 ± 17.93</td>
<td>90.81 ± 14.97</td>
</tr>
<tr>
<td>女右</td>
<td>67.64 ± 17.59</td>
<td>37.77 ± 6.80</td>
<td>82.55 ± 17.89</td>
<td>92.26 ± 16.15</td>
</tr>
<tr>
<td>合计</td>
<td>139.01 ± 34.98</td>
<td>38.06 ± 6.27</td>
<td>83.40 ± 16.81</td>
<td>93.01 ± 14.04</td>
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</tbody>
</table>

注：左右两侧比较 * P < 0.05 ** P < 0.01；不同性别间的比较 ▲ P < 0.01。

藏族的 atd 角（表 5）男性为 42.95°，女性为 43.28°，男、女性均表现为左侧大于右侧，总体比较来看男性的 atd 角小于女性。

<table>
<thead>
<tr>
<th>年龄 (岁)</th>
<th>男左</th>
<th>男右</th>
<th>女左</th>
<th>女右</th>
<th>合计</th>
<th>男左</th>
<th>男右</th>
<th>女左</th>
<th>女右</th>
<th>合计</th>
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<tr>
<td>43.03 ± 3.90</td>
<td>42.88 ± 3.93</td>
<td>42.95 ± 3.45</td>
<td>43.58 ± 4.21</td>
<td>42.97 ± 3.97</td>
<td>43.28 ± 3.67</td>
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<td></td>
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</table>

注：同性别不同侧别比较 * P < 0.05。

3.2 具体参数比较及聚类分析（表 6—7）。

<table>
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<tr>
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<th>(A)</th>
<th>(B)</th>
<th>(C)</th>
<th>(D)</th>
<th>TFRC (X ± SD)</th>
<th>atd (X ± SD)</th>
<th>ab-RC (X ± SD)</th>
<th>(ab-RC)</th>
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### 民族

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</tr>
<tr>
<td>水族</td>
<td>10.00</td>
<td>75.28</td>
<td>6.11</td>
<td>8.61</td>
<td>125.18</td>
</tr>
<tr>
<td>水族</td>
<td>3.66</td>
<td>52.17</td>
<td>3.04</td>
<td>41.13</td>
<td>127.25</td>
</tr>
<tr>
<td>水族</td>
<td>2.83</td>
<td>54.35</td>
<td>2.39</td>
<td>40.43</td>
<td>136.54</td>
</tr>
</tbody>
</table>
Fig. 1 Dendrogram of palmprint and fingerprint parameter
## Tab. 7 Comparison of fingerprint parameters among of Tibetan ethnic population and Han nationality etc. 7 groups

<table>
<thead>
<tr>
<th>民族</th>
<th>例数</th>
<th>弓型纹 (A)</th>
<th>箕型纹 (L)</th>
<th>斗型纹 (W)</th>
<th>总指纹嵴线计数 (TFRC)</th>
<th>ab嵴线计数 (ab-RC)</th>
<th>指纹强度指数</th>
</tr>
</thead>
<tbody>
<tr>
<td>藏族</td>
<td>1183</td>
<td>4.20</td>
<td>43.00</td>
<td>52.80</td>
<td>139.01</td>
<td>38.06</td>
<td>14.86</td>
</tr>
<tr>
<td>汉族</td>
<td>1040</td>
<td>2.03</td>
<td>47.12</td>
<td>50.86</td>
<td>143.63</td>
<td>38.05</td>
<td>14.88</td>
</tr>
<tr>
<td>美国白人</td>
<td>716</td>
<td>4.7</td>
<td>67.65</td>
<td>27.6</td>
<td>122.10</td>
<td>38.00</td>
<td>12.29</td>
</tr>
<tr>
<td>津巴布韦</td>
<td>270</td>
<td>10.00</td>
<td>81.39</td>
<td>8.61</td>
<td>125.18</td>
<td>39.69</td>
<td>9.86</td>
</tr>
<tr>
<td>印度</td>
<td>270</td>
<td>3.66</td>
<td>55.21</td>
<td>41.13</td>
<td>127.25</td>
<td>—</td>
<td>13.75</td>
</tr>
<tr>
<td>孟加拉</td>
<td>138</td>
<td>2.83</td>
<td>56.74</td>
<td>40.43</td>
<td>136.54</td>
<td>—</td>
<td>13.73</td>
</tr>
</tbody>
</table>

### 讨论

藏族与汉族、美国白人、津巴布韦等57个群体的掌指纹参数见表7。从表7中可以看出弓型纹频率在拉祜族最低 (0.94%) 和藏族较高 (4.2%)，津巴布韦黑人最高 (10.00%)；箕型纹频率在同属藏缅语系藏缅语族的藏族 (36.2%)、普米族 (38.08%) 和门巴族 (39.12%) 均很低，在高加索人种的美国白人 (63.2%) 和俄罗斯族 (69.2%) 较高，在黑色人种的津巴布韦人中最高 (75.28%)；斗型纹频率在黑色人种的津巴布韦人 (8.61%) 最低，其后为美国白人 (27.6%) 和俄罗斯族 (23.6%)，而普米族 (58.85%) 最高，藏族次之 (52.80%)。

#### 指纹强度指数

指数是用来评价一个人群中指纹花样分布的总情况，计算公式为：

$$\text{指纹强度指数} = \left(2 \times \text{斗型纹出现率} + \text{箕型纹出现率}\right) / 10$$

从表7看出，津巴布韦黑人的指纹强度指数最小 (仅为9.86)，普米族最高为15.72，藏族的指纹强度指数较高为14.86。

藏族的指纹以斗型纹和箕型纹为主，具有黄种人的皮纹特征，并且与汉族的相似性较大，而与印度人、孟加拉人、美国白人和津巴布韦黑人的相似性较小，反映出指纹的种族差异。

从对藏族等57个人群的聚类分析来看，傈僳族、维吾尔族、印度人、孟加拉人等33个群体聚成一类，藏族、汉族、普米族、门巴族等20个群体聚成一类，朝鲜族自成一类，以上三类聚成一大类，俄罗斯族、美国白人先与津巴布韦黑人聚成一类，然后再与以上三类聚成一大类。从以上聚类分析的结果可以看出，虽然印度人和孟加拉人最终与藏族聚为一类，但印度人群和孟加拉人群首先被聚在以我国南方族群为主的一类里，而藏族则首先被聚在以我国北方族群为主的一类里，并且主要是与汉族和氐羌氏族的后裔（普米族、羌族等）聚在一起。

可见从肤纹学角度推断藏族与汉族和氐羌氏族的亲缘关系较近，而与印度人和孟加拉人的亲缘关系较远，这在一定程度上驳斥了藏族起源的印度源说，而支持藏族起源是当地土著与氐羌融合的观点。
Preliminary Research on the Origin of Tibetan Ethnic Populations in Tibet: The Clue from Dermatoglyphics

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Abstract: To explore the origin of dermatoglyphic patterns in Tibetan ethnic populations, 1183 Tibetans were selected using stratified cluster sampling. The characteristics of this sample were then compared to 56 other populations using cluster analysis. In the Tibetan ethnic sample, whorls (52.89%) were the main type of fingerprint pattern, loops were next (42.95%), followed by arches (4.16%). Total finger ridge counts were 144.75 in males and 133.87 in females, with the mean of 139.01. The Atd angle was 42.95° and 43.28° in males and females, respectively. Cluster analysis of palm print and fingerprint parameters showed that northern populations such as the Tibetan ethnic group, the Han nationality and descendants of the Diqiang nationality (Menba nationality, Qiang nationality and so on) clustered into one group. This work thus indicates the relationship of the Tibetan ethnic population was close to the Han nationality and the descendants of Diqiang nationality but distant from peoples of Indian and Bengali ancestry.

Key words: Tibet; Ethnic populations; Palm print; Fingerprint