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## **A Glottochronological Insight into Hindi and Punjabi Lexicon**

**Nishtha Setia and Aditya**

Amity School of Liberal Arts  
Amity University Gurgaon, Haryana, India

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### **Abstract**

The prime objective of this study is to explore the degree of similarities between Hindi and Punjabi words using glottochronological approach. In doing so a representative sample of 248 basic words were taken from Hindi followed by listing their equivalents in Punjabi. The findings revealed 153 words with partial phonological similarity between Hindi and Punjabi. Furthermore, the study also revealed that these two languages had belonged to one common parent language 1138 years ago.

### **1. Introduction**

Glottochronology is a method of lexicostatistics to compute not only the degrees of lexical similarities between two languages but also to find relationship between languages in terms of when they diverged from each other. The method of Glottochronology proposed by Swadesh (1955) assumes that common words in languages are maintained at a definite rate. According to Swadesh, (i) the rate of retention of vocabulary items in the basic core is constant through time; (ii) the rate of loss of basic vocabulary is approximately the same in all languages; (iii) the rate of loss was arrived at by testing lexical loss in languages with a long series of texts. On the basis of tests, 81% of loss is reported over the period of 1000 years. Once we know the percentage of cognates within the core vocabulary (248 in the present case) for any pair of languages, the length of time that has elapsed is computed to see when the two languages began to diverge from a single language. The following list of basic vocabulary, taken from the similar study of Jha (2020), has been prepared in terms of Hindi-Punjabi 248 words considered to the representative samples.

1. A-Ek- ika –s
2. About-Ke bare me- us bare- s
3. Above-Upar- upar- s
4. Add-jorna-samal karo – d
5. After- bad me – de baad –s
6. Air- hava- hava- s
7. All- sab- sab-s
8. Almost – lagbhag- lagbhaag-s
9. Along- sath me- naal –d
10. Also – bhi- bhee – s
11. Always- hamesha- hamesha- s
12. And – aur/evam- ate –d
13. Animal- janwar- janwar -s
14. Another- ik aur- ika hor-s
15. Answer- uttar- javab- d
16. Any- koi bhi- koi vi- s
17. Around- charo or- alle duale – d
18. Ask – puchna –puchna –s
19. At- par- te –d
20. Away- dur- dur- s
21. Ban- pratibhand- pabadi –s
22. Because- kyonki-kyonki- s
23. Become- hona- banna- d
24. Bed-bistar- bistare-s
25. Begin- shuru karna- shuru- s
26. Below- niche- hethaa-d
27. Between-ke bich me- vichkaar- s
28. Big- bara- vadda –s
29. Both- dono-dono- s
30. Boy- larka- munda-d
31. Bring- lana- laao- s
32. By-dwara- naal-d
33. Call- bulana- sadna-d
34. Can – sakna- sakda hai-s
35. Carry- le jana- laa- s
36. Change- badalna- badalo- s
37. Children- bachche- jawak- d
38. City- shahar-shaher- s
39. Close- band-band-s
40. Cold- thandha-thanda-s
41. Come- aanaa-aaunaa-s
42. Cough- kaph-khagha –d
43. Country-desh- desh- s
44. Cut- katna-katoo-s
45. Daily-dainik-rojana- d
46. aDifferent- bhinn-vakhara-d
47. Do- karna- karo-s
48. Door-darwaja-darwaja- s
49. Down- niche-thale/hetha-d
50. Earth- dharti- dh arti- s
51. Eat- khana- khao-d
52. End-ant-ata-s
53. Example- udahran- udahran-s
54. Eye-aankh- ankh- s
55. Face-chehra- chehra- s
56. Family- pariwar- pariwar- s
57. Father- pita- pita- s
58. Foot- pair- pair –s
59. Few- kuchh- kujh- s
60. Find- pana- labho- d
61. First- prtham/pehla-pehla- s
62. Food- bhojan-bhojan –s
63. For- ke/liye- lai- d
64. From- se- to- d
65. Get- pana- parpat karna- s
66. Girl- larki- kudi- d
67. Give- dena- dena- s
68. Go- jana- jana- s
69. Good- achahha- changa- d
70. Great- mahan- mahan- s
71. Group- samuh-samuh- s
72. Grow- badhna- vadhana- s
73. Hand- haath- hatha- s
74. Has/have- hai- hai- s
75. He- vah- uha- s
76. Hear- sunana-sunana- s
77. Help- madad karna- madad- s
78. Here- yahan- ithe- d
79. High- uncha- ucha- s
80. Hot- garm- garm- s
81. House- ghar- ghar- s
82. How- kaise- kive- s
83. I- mai- mai- s
84. Idea – vichar- vichaar- s
85. If- yadi- te- d
86. Important- mahatuvpurn-  
mahatupvpurn-s
87. In- me- vich- d

88. Is-hai- hai-s  
89. Item- vastu- ikai- d  
90. Keep- rakhna- rakho- s  
91. Kind- prakaar- kisama –d  
92. Land- jamin-jamin- s  
93. Large- vishaal- vaada-s  
94. Last- antim- akhari-s  
95. Later- baad me- baad vich- s  
96. Learn- seekhana- sikhao-s  
97. Leave- chhodna- chhado-s  
98. Left-baaen- khabe-d  
99. Let- chalo- deo- d  
100. Letter- patra/chith-patara-s  
101. Life- jindagi/jeevan-zindagi-s  
102. List- suchee-suchee-s  
103. Little- thoda- thoda- s  
104. Live- jeena/rehna-jeena-s  
105. Long- lamba-lamba-s  
106. Main- mukhy/pradhaan-mukha-s  
107. Make-banana-banuna-d  
108. Man- aadmee-aadmee-s  
109. Many-aneek/bahut-bahut sare-s  
110. May- sakna- sakda hai-s  
111. Me-mujhe- maniu-d  
112. Mean-matlab-matlab-s  
113. Meet-milna-milna-s  
114. Mid-madhy-madha-s  
115. Milk-dudh-dudh-s  
116. Mistake-galti-galti-s  
117. More-adhik/jyadaa-hor-s  
118. Morning-subhah-savere-d  
119. Mother-maa-maa-s  
120. Mountain-pahaar-pahaad-d  
121. Move-chalna-chalna-s  
122. Much-bahut-bahut-s  
123. My-mera-mera-s  
124. Name-naam-naam-s  
125. Near-pass-nere-d  
126. Need-jaroorat-load-d  
127. Never-kabhi nahi-kade nhi-s  
128. New-naya-navaa-d  
129. Next-aglaa-aglaa-s  
130. Night-raat-raat-s  
131. No-na/nahi-nahi-s  
132. Now-ab-hun-d  
133. Of-ka-de-d  
134. Off-band-band-s  
135. Often-aksar-aksar-s  
136. Oil-tel-tel-s  
137. Old-puraana/budha-praana-s  
138. On-per-per-s  
139. Once-ek baar-ik vaar-s  
140. One-ek-ik-s  
141. Only-keval-sirf-d  
142. Open-khula-khula-s  
143. Or-ya/athwaa-jaa-d  
144. Other-annya-hor-d  
145. Our-hamaara-sada-d  
146. Out-bahar-bahar-d  
147. Over-oopper-vadha-d  
148. Own-apna-apna-s  
149. Path-path-marag-d  
150. Paper-kaagaz-kaagaz-s  
151. Part-hissa/bhaag-bhaag-s  
152. People-log-log-s  
153. Place-jagah-jagah-s  
154. Plant-paudhapaudha-s  
155. Play-khel-khed-d  
156. Present-batman-maujda-d  
157. Put-daalna/rakhna-pa-d  
158. Read-padhna-padhna-s  
159. Really-sachmuch-sachmuch-s  
160. Right-sahi/daahine-saaje-d  
161. River-nadi-nadi-s  
162. Run-daud-bajna-d  
163. Same-samaan-uhi/iko jahi-d  
164. Saw-dekhna-dekhya-d  
165. Say-kehna-kehna-s  
166. School-vidyaalai-vidyaalai-s  
167. Sea-samundra-samundar-s  
168. See-dekhna-dekhna-s  
169. Seem-lagna-lagda-s  
170. Sentence-waakya-waak-s  
171. Set-samuh-ladi-d  
172. She-vah-uha-d  
173. Should-chaahiya-chahida hai-d  
174. Show-dikhana-dekhana-s  
175. Side-disha/paksh-pase-d

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|---------------------------------------|-----------------------------------|
| 176. Small-chhota-chotta-s            | 213. Tree-ped-rukhd               |
| 177. So-isliye-isliye-s               | 214. Try-koshish-koshish-s        |
| 178. Some-kuchh-kuchh-s               | 215. Turn- mod/ghumaav-vari-d     |
| 179. Something- kuchh-kuchh –kuj- d   | 216. Under-ander-de adhin-d       |
| 180. Sometimes-kabh-kabhi-kade-kade-s | 217. Until-jab tak- jad tak-s     |
| 181. Song- geet- gaana-s              | 218. Up-upper-upper-s             |
| 182. Soon-jaldi-jaldi-s               | 219. Us-hamen-sanu-d              |
| 183. Sound-dhuwani-awaj-d             | 220. Use-upyog-varatana-d         |
| 184. Spell-jaadu/mantra-jaadu-s       | 221. Very-bahut-bahut-s           |
| 185. Start-shuru karna-shuru karna-s  | 222. Walk-tahalna-turana-d        |
| 186. State-isthiti-rajad              | 223. Want-chahna-chahida-d        |
| 187. Still-phir bhi-aje vi-d          | 224. Was-tha-si-d                 |
| 188. Stop-rok-rok-s                   | 225. Water-paani-paani-s          |
| 189. Story-kahaani-kahaani-s          | 226. Way-raasta/maarg-tarika-d    |
| 190. Study-adhyayan-adhyayan-s        | 227. We-ham-asii-d                |
| 191. Such-aisa-ajihe-d                | 228. Well- achhi tarah-kharia-d   |
| 192. Sweets-meetha-meetha-s           | 229. What-kya-ki-s                |
| 193. Take-lena-laa-d                  | 230. When-kab- jado-d             |
| 194. Talk-baatheet-gal karni-d        | 231. Where-kahan-kithe-d          |
| 195. Tell-kahna-dasna-d               | 232. Which-kaun kaun se-kihara-d  |
| 196. Than- kee apeksha-vadh-d         | 233. While-jabkee-jadaki-s        |
| 197. That-kee/taaki-uha-d             | 234. White-saphed-chitta-d        |
| 198. Their- unki-uhanada-d            | 235. Who-kaun-kaun-s              |
| 199. Them-uhne-uha-s                  | 236. Whom-kisko-jise nu-d         |
| 200. Then-to-phira-d                  | 237. Why-kyon-keo-s               |
| 201. There-wahan-uthe-d               | 238. Will-marjee-marjee-s         |
| 202. These-in-iha-s                   | 239. With-saath mein-de naal-d    |
| 203. They-way-uha-d                   | 240. Without- ke bina-bine-s      |
| 204. Thing-baat-cize-d                | 241. Word-shabd-shabd-s           |
| 205. Think-sochna-sochna-s            | 242. Work-kaam-kam-s              |
| 206. This-yah-iha-d                   | 243. World-vishv/sansaar-sasaar-s |
| 207. Those-un-uha-d                   | 244. Write-likhna-likhna-s        |
| 208. Thought- vichaar-soch-d          | 245. Year-saal-saal-s             |
| 209. Time-samay-samaa-s               | 246. You-tum-tusi-s               |
| 210. To-tak/se-nu-d                   | 247. Young-yuva/javan-javan-s     |
| 211. Together-sath/ek sath-ikathe-d   | 248. Your-tumhara-tuhada-s        |
| 212. Too-bhi-vhi-s                    |                                   |

In the comparison of Hindi and Punjabi, two facts come on surface. Firstly 153 words out of the 248 pairs were registered as probable cognates. Statistically, if we divide 153 by 248, we get .61 (61%). In other words, one can say here that the degree of similarity between Hindi and Punjabi is 61%. This is the value which will also be used for C in the time depth formula.

Secondly, the study finds time depth of Hindi-Punjabi as to when these two languages started separating from a common parent language. In doing so, the following time depth formula of Swadesh (1956) was used:

## Time Depth Formula:

$$t = \frac{\log C}{2 \log r}$$

Where

t = time of separation

c = percentage of shared core vocabulary

r = the glottochronological constant (= 81%)

The result of computing the values using the above formula is as follows:

$$t = \frac{\log .61}{2 \log .81}$$

After computing the log value in the above formula, the result is as follows:

$$t = \frac{.494}{2 \times .217}$$

$$t = \frac{.494}{.434}$$

$$t = 1.138$$

The quotient of .494 divided by .434 gives 1.1382488479 which is the indicated time depth, 't'. This needs to be read further as Hindi and Punjabi separated from each other about 1138 years ago.

## Conclusion

Meeting the objectives of the study, the study firstly has revealed the degree of similarities between Hindi and Punjabi which was found to be 74%. Secondly, the study reveals that Hindi and Punjabi belonging to the same language family, i.e. Indo-Aryan family, started separating from each other about 1138 years ago. The authenticity of the data is subject to further research.

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