

creation; maybe it was travelling all this time, since the beginning of the world, and has not come to earth yet. Can't it be, mamma?"

A.'s hypotheses fall into two groups: those which he himself knows to be hypothetical, and those which he thinks are truths. These latter are beliefs and conceptions based on misunderstood information. The man-in-the-moon theory belongs to the second group, while that about the sounds from the stars is a real hypothesis.

XXXIV. A COMPARISON OF THE SIZES OF THE VOCABULARIES OF FIFTY CHILDREN OF THE SAME AGE

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For several years I have been collecting the vocabularies of children at the age of eighteen months. It was my hope that a careful study of such vocabularies might throw some light upon several problems of child psychology and education, such as: A child's earliest interests; the normal range of vocabulary among normal children of the same age; and the differences between the sexes, if such difference exists in the matter of speech development.

I have now collected fifty-one of these vocabularies almost evenly divided between the sexes. My friends have helped generously in gathering the material; and I am especially indebted to Mrs. Margaret Morse Nice, who has made so many interesting and valuable studies of the speech development of children. It is not my purpose at this time to make an intensive study of the contents of the vocabularies, but to examine their size, and to see if any deductions can be drawn in regard to the average or normal number of words of boys and girls at the age of eighteen months.

My material arranges itself as follows:

Cases Collected from Published Studies

Name	Sex	Source	Total Words
1. Allee -----	Male	11	1
2. Cary -----	Male	8	60
3. Gale 2 -----	Male	6	113
4. Oatman-Blachly 1 -----	Male	1	113
5. Nice 2 -----	Female	11	0
6. Nice 3 -----	Female	11	2
7. Drummond -----	Female	5	7
8. Gale 3 -----	Female	6	33

9. Gale 1 -----	Female	6	36
10. Watson -----	Female	12	74
11. Grant -----	Female	7	107
12. Mickens -----	Female	8	116
13. Dewey -----	Female	4	144
14. Nice 1 -----	Female	10	145
15. Bateman -----	Female	2	175
16. Bohn -----	Female	3	207
17. Martindell -----	Female	6	233

Total Words of 4 boys ----- 287

Total Words of 13 girls ----- 1267

Total Words of 17 children ----- 1554

Average Words of 4 boys ----- 72

Average Words of 13 girls ----- 97

Average Words of 17 children ----- 91

Cases Gathered from Private Sources

Name	Sex	Source	Total Words
1. Dellinger -----	Male	13	0
2. Town -----	Male	13	0
3. Richards* -----	Male	13	1
4. Baker -----	Male	13	2
5. Kraettli -----	Male	13	3
6. Helliwell -----	Male		1
7. Morse -----	Male	13	4
8. Adams -----	Male		6
9. Robb -----	Male	13	7
10. Reaves -----	Male	13	8
11. Finlayson -----	Male		9
12. Southwick -----	Male	13	10
13. Gossard -----	Male	13	12
14. Karcher -----	Male	13	36
15. Rothrock -----	Male		60
16. Monroe -----	Male	13	68
17. Court -----	Male	13	71
18. Ratti -----	Male	13	71
19. Oatman-Blachly (2) -----	Male	13	77
20. Dale -----	Male	13	108
21. Ordahl -----	Male		172
22. Miller -----	Male		523
23. Morse (2) -----	Female	13	0

*This case was first reported as O and was so given in reference 13.

24. Baker (3) -----	Female	13	2
25. Baker (1) -----	Female	13	9
26. Brooks -----	Female	13	9
27. Nice (4) -----	Female	13	9
28. Hays -----	Female		13
29. Theresa -----	Female		24
30. Rice -----	Female	13	25
31. Maxon -----	Female		78
32. Ivins -----	Female		100
33. Dodge -----	Female		201
34. Helliwell -----	Female	13	228
Total Words of 22 boys -----			1251
Total Words of 12 girls -----			698
Total Words of 34 children -----			1949
Average Words of 22 boys -----			57
Average Words of 12 girls -----			58
Average Words of 34 children -----			57

SUMMARY OF ALL CASES (51)

Total Words of 26 boys -----			1538
Total Words of 25 girls -----			1965
Total Words of 51 children -----			3503
Average Words of 26 boys -----			59
Average Words of 25 girls -----			78.6
Average Words of 51 children -----			69

CORRECTED SUMMARY

(Omitting all cases of O and all over 200)

Total Words of 23 boys -----			1015
Total Words of 19 girls -----			996
Total Words of 42 children -----			2011
Average Words of 23 boys -----			44
Average Words of 19 girls -----			52
Average Words of 42 children -----			48

ANALYSIS OF CORRECTED SUMMARY

(Published Cases)

Total Words of 4 boys -----			287
Total Words of 10 girls -----			827
Total Words of 14 children -----			1114
Average Words of 4 boys -----			72
Average Words of 10 girls -----			83
Average Words of 14 children -----			79.5

(Unpublished Cases)

Total Words of 19 boys.....	728
Total Words of 9 girls.....	169
Total Words of 28 children.....	897
Average Words of 19 boys.....	38
Average Words of 9 girls.....	19
Average Words of 28 children.....	32

Needless to say, these averages, made from such a range of variation, are worthless. It is evident that no general conclusions can be drawn from material so discrete. I have plotted these vocabularies repeatedly in many different arrangements, and no norm or median appear, no curve of any recognizable type presents itself. Evidently a much larger number of cases must be gathered before it is possible to establish standards of normal variations. At present the most that can be said is, that of the fifty-one vocabularies, more than half (twenty-eight in all) range from no words to thirty-six words. Of these twenty-eight, only three contain more than twenty-five words.

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