

Psychology. — *Occipital forms, facial dimensions, age, intellect and character.* By E. D. WIERSMA.

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The investigations on "Facial dimensions, age and intellect" ¹⁾ demonstrated that a connection exists between the dimensions of the face, the age, and the intellectual powers. The following investigation was made with the object of ascertaining in how far the dissimilitude in the form of the occiput is coupled with differences in psychical phenomena (temperament, intellect and character), in bodily build and in physiological functions. The said dissimilitude in the occipital forms concern the prominence or sharp regression of the back of the head. They are frequently distinguishable by the eye. In doubtful cases the distance is measured from the glabella to the vertex, to the middle of the occipital curve and to the limit of the hair growth at the back of the neck. In respect of the prominent occiput, these measurements show greater differences, and in respect of the receding occiput, lesser differences. The material for this investigation was afforded me in various ways.

1. Dr. L. KAISER took photos en profile of 217 pupils (117 male and 100 female ones). In many of these it can be plainly seen whether the occiput is prominent or steeply receding, and in those of the male students it can further be seen whether the prominence is most pronounced in the upper part, the middle part, or lower part of the head.

Not all the photos could be made use of for this investigation, because the hair, especially of the female students, does not allow of the exact form of the back of the head being distinguished in the photos. As Dr. KAISER comes into close contact with her pupils, she was able, in the majority of cases to state the psychical qualities with regard to temperament, intellect and character. I am greatly indebted to Dr. KAISER for this material.

2. In the somato-psychological enquête ²⁾, I inquired, in question 115, whether the occiput of the individual in question projected or receded. These forms were selected from the enquête material and in both cases it was investigated what differences there were in bodily and mental qualities.

3. In the above-mentioned enquête there was further inquired whether

1) Proc. Kon. Ned. Akad. van Wetensch., Amsterdam, 42, 727 (1939).

2) *Capita psychopathologica*, p. 373—377.

Ter overdenking voor huisarts en student, p. 42, 46—75.

Voor paedagoog en huisarts, p. 56 and following.

the individual in question was shortheaded or longheaded. It is known that in longheaded persons a very large percentage of individuals exhibit a prominent occiput, whereas this is strongly receding in the case of shortheaded persons. The Table below will show this.

Figures of the percentages.

	Longheaded	Shortheaded
Prominent occiput	62.6	17.1
Receding	26.8	42.2

4. The said enquête further supplies information respecting differences in psychical qualities of the fine and slender persons and the thicksets, and teaches that persons with a prominent occiput are more fine and slender and less thickset, while the persons with receding occiput are less fine and slender and more thickset than the average.

Percentage figures.

	Prominent occiput	Receding occiput	Average
Fine and slender persons	43.2	32.8	38.1
Thicksets	9.5	12.4	10.6

5. Measurements were also taken of mentally normal and abnormal persons of widely different ages in the Children's Hospital, in the Surgical Clinic, in the Open Air School, and in the schools for feeble-minded and for imbecile children, at Groningen. My thanks are due to the Heads of these Institutes for permission to enter their institutions, for the assistance afforded me, and for the information supplied. Compasses-measurements were taken of the distance from the glabella to the vertex, from glabella to the middle of the occipital curve, from the glabella to the limit of the hair-growth in the neck, and, further, the length of the forehead, of the upper and of the lower jaw, as has been indicated elsewhere ¹⁾.

Below I give the investigation of the above-mentioned groups.

In order to judge of the differences in intellect in her material, Dr. KAISER (group 1) attached value to the existence of special gifts, to adroitness, succinctness and matter of factness in their narration. The enquête material (groups 2, 3 and 4) was judged from the answers to questions as to quickness of grasp and good sense, or as to superficiality and stupidity,

¹⁾ Proc. Kon. Ned. Akad. van Wetensch., Amsterdam, 42, 727 (1939).

Temperamental Qualities.

	Group 1		Group 2			Group 3 ¹⁾			Group 4 ²⁾	
	A	n A	A	n A		A	n A		A	n A
Average	57.3	42.7	63.7	37.1	Average	66.7	23.2	Average	66.6	23.4
Prominent occiputs	54.2	45.7	60.5	37.1	Longheaded	63.6	27.1	Fine and slender persons	65.6	25.3
Receding occiputs	63.3	36.7	67.0	32.9	Shortheaded	66.9	20.8	Thicksets	73.0	20.5
	E	n E	E	n E		E	n E		E	n E
Average	61.5	38.5	62.9	37.1	Average	65.3	16.9	Average	65.3	16.9
Prominent occiputs	68.1	31.9	69.1	30.8	Longheaded	64.9	19.2	Fine and slender persons	68.9	18.0
Receding occiputs	46.7	53.3	56.9	43.3	Shortheaded	69.4	16.2	Thicksets	57.1	14.3
	S	P	S	P		S	P		S	P
Average	38.4	61.6	31.9	68.2	Average	40.3	26.6	Average	46.5	24.1
Prominent occiputs	30.6	69.4	33.3	66.6	Longheaded	41.8	25.6	Fine and slender persons	46.9	24.6
Receding occiputs	56.7	43.3	53.2	44.5	Shortheaded	38.3	31.1	Thicksets	53.2	18.8

1) Zeitschr. f. angewandte Psychologie. B. 38, p. 151.

2) Zeitschr. f. angewandte Psychologie. B. 38, p. 162.

to more or less knowledge of human nature, to broad-mindedness or narrow-mindedness, to individuality or an inclination to imitation, to the greater or lesser powers of observation. Intellectual differences between the persons of group 5 can, for a part, be inferred from the schools which they attend, and were further supplied me by the Heads of the Institutions, which, in many cases, have the I. Q. of the pupils at their disposition.

In forming a judgment of the character the most important point is to ascertain whether the individual in question is chiefly preoccupied with himself, or has always interest in, and a fellow-feeling for, others; whether he thinks in the first place of his own interests or is in the habit of entering into the difficulties of the persons in his environment; in how far thus, egoistic or altruistic motives dominate in his thoughts and actions. Egoism is stamped upon all the lower character traits, on the vital, egophile and the lower abstract tendencies.

For the reasons above-mentioned, in the investigation of group I, I made use only of the photos of the male students. (See table on page 694).

In these four groups persons with a receding occiput possess a greater activity, and persons with a prominent occiput less, than the average. This similarity in the groups exhibits a few exceptions in regard to the emotionality and the psychical after-effects. From the Table below, in which the average values of all the groups are given, it appears that persons with a very receding occiput are more active, less emotional, and of secondary importance than the average, and than the persons with a prominent occiput.

Average	A	n A	E	n E	S	P
Of all occiputs	62.2	31.4	63.7	27.3	46.8	45.1
Of prominent occiputs	60.9	33.8	67.7	24.9	38.1	46.6
Of receding occiputs	67.5	27.7	57.5	31.8	50.3	34.4

Intellect and character.

Intellect and character are in a high degree dependent on the temperament. It is known that mental grasp as well as superficiality is promoted by primary functions; good sense and broad-mindedness, as well as stupidity, by secondary functions; violence and irritability, as well as compassion and helpfulness, by the sensibilities; perseverance and thoughtfulness, as well as suspiciousness and distrust, by the secondary functions; receptivity of new ideas, as well as contradictions in thought and action, by the primary functions. On the grounds of these differences found in all the groups, a survey of the average values is given, as in the temperamental qualities.

In judging the intellect of the persons in the several groups, it was noted whether the above-enumerated symptoms were evinced or not.

	Group 1		Group 2	
	Intellectual	Not intellectual	Intellectual	Not intellectual
Average	63.9	4.2	59.6	9.9
Prominent occiput	62.1	2.5	62.3	9.4
Receding occiput	50.0	3.3	58.1	10.5

The investigation of the longheaded and shortheaded, the fine and slender persons and thicksets, indicates that the longheaded are more secondary, the shortheaded more primary than the average (see Table of the temperamental qualities). In accordance with this, the longheaded are less receptive and more understanding than the shortheaded. The thicksets are more secondary than the fine and slender persons and, accordingly, more understanding.

In the same way the persons in groups 2, 3 and 4 are distinguished in egoistic and altruistic thinking and feeling individuals. The degree of their egoism is evinced in their more or less indulgence in the satisfying of vital tendencies, in the lessened altruism, their feebleness of duty and love of truth, their greater suspiciousness and unreliability.

	Group 1		Group 2	
	Egoism	Altr.	Egoism	Altr.
Average	29.9	23.0	18.7	55.1
Prominent occiputs	30.5	20.9	20.1	55.4
Receding occiputs	20.0	30.0	19.7	56.8

	Group 3			Group 4	
	Egoism	Altr.		Egoism	Altr.
Average	22.4	65.7	Average	30.8	47.6
Longheaded	21.6	65.3	Fine and slender	29.3	48.6
Shortheaded	25.7	63.2	Thicksets	27.4	51.7

From the above Table it is apparent that the persons with a very receding

occiput stand on a higher moral plane than the persons with a prominent occiput. This holds good for all the groups, except Group 3.

Group 5. The measurements taken in the above-mentioned institutions of 205 persons are expressed in the Table below in percentages of the middle skull-line.

Age	Number	Upper line	Lowest line	Height of forehead	Length of upper jaw	Length of lower jaw	Length of jaw system
0— 1 y.	21	95.3	97.7	26.1	36.5	15.6	52.1
1— 2 y.	20	97.8	91.2	26.2	36.9	17.0	53.9
2— 5 y.	16	93.8	90.9	29.6	38.3	17.9	56.2
5—12 y.	46	97.3	90.0	26.3	44.1	18.0	62.1
12—18 y.	15	97.7	94.0	28.4	43.1	19.5	62.6
above 18	87	96.2	95.8	29.8	44.4	22.5	66.9

From the above Table it will be seen that the height of the forehead, the length of the upper jaw, of the lower jaw, and of the whole jaw system becomes regularly greater with increasing age in proportion to the middle line of the skull.

Sex	Number	Upper skull	Lower skull line	Length of forehead	Length of upper jaw	Length of lower jaw	Length of jaw system
Male	47	96.3	95.8	30.7	44.3	22.1	66.4
Female	40	96.0	95.8	28.9	44.7	21.0	65.7
Male and Female	87	96.2	95.8	29.8	44.4	21.5	65.9

The differences in facial and skull dimensions is of little significance.

Influence of intellectual gifts.

Of 92 pupils in the school for feeble-minded children the I. Q. fluctuated between 60 and 90, of 72 pupils in the school for imbecile children the I. Q. was lower than 60. These feeble-minded and imbeciles are compared in

the following Table with normal individuals of about the same age (5—18).

Number	Mental cond.	Upper skull line	Lower skull line	Length of forehead	Length of upper jaw	Length of lower jaw	Length of jaw system
61	normal	97.5	92.0	27.2	43.6	18.9	62.5
92	feeble-minded	96.0	90.5	23.4	43.8	20.7	64.4
72	imbecile	98.9	86.2	23.6	48.9	19.0	67.9

It will be evident from the above Table that in the imbeciles the upper line of the skull differs most from the middle, the occiput projecting most in the middle. With the normal, the forehead is higher, the upper and the lower jaw and the whole jaw system smaller, in proportion to the middle skull-line than with the feeble-minded and the imbeciles.

In the Open-air School, where children with various bodily infirmities are taught, measurements were taken of 28 children. According to the information from the resident nurse and the teacher, 16 children are intellectually normal and 12 are feeble-minded. The following Table gives a survey of the measurements.

Number	Mental cond.	Upper skull line	Lower skull line	Length of forehead	Length of upper jaw	Length of lower jaw	Length of jaw system
12	feeble-minded	99.4	89.8	24.5	45.0	16.9	
16	normal	96.2	87.8	26.2	43.3	19.4	

This Table, too affords evidence that the forehead of the feeble-minded is smaller than normal size, while the upper jaw is larger than the normal.