University of Timisoara, Romania

Genetic Components in Motivational Aspects of Character

G. Oancea-Ursu

This report deals with the nature-nurture problem in relation to some primary aspects of character in normal twins and siblings; namely, on 12 primary impulses, or propensities, whereon reports of detailed study are rare. These factors form the energetic side of any human being's behavior and thereby the native equipment in anybody's character: its units of composition. In agreement with Galton's dichotomy of intellect and character, the latter actually makes up the second half of our personality's organization: its motor area.

In the search for character roots through the interaction of heredity and environment, Galton was the first to bring out, through pedigree studies, the existence of noticeable hereditary components. However, as to inquiries by twin method, character is in a far less satisfactory status than any of the other heritable traits of personality. So far, we know neither the possible genetic stability of those primary impulses which in clinical experience passed for the most forcible, nor the degree of peristatic plasticity of those which might admittedly be the most docile.

A sample of 44 MZ and 41 same-sexed DZ twin pairs and 39 pairs of siblings were administered a standard battery of 120 questions of the Self-Rating Questionnaire type. For each pair, individual scores, as well as intrageminal differences, were worked out.

Concordances and discordances are shown in Fig. 1, in terms of a centile scale. The general mean of the differences for all impulses amounts to 1.30 deciles in MZ, and to 2.90 and 3.10 deciles in DZ and in siblings, respectively.

Although more similar than DZ and sibling pairs, MZ pairs clearly show conspicuous differences, which may be attributed to environmental factors.

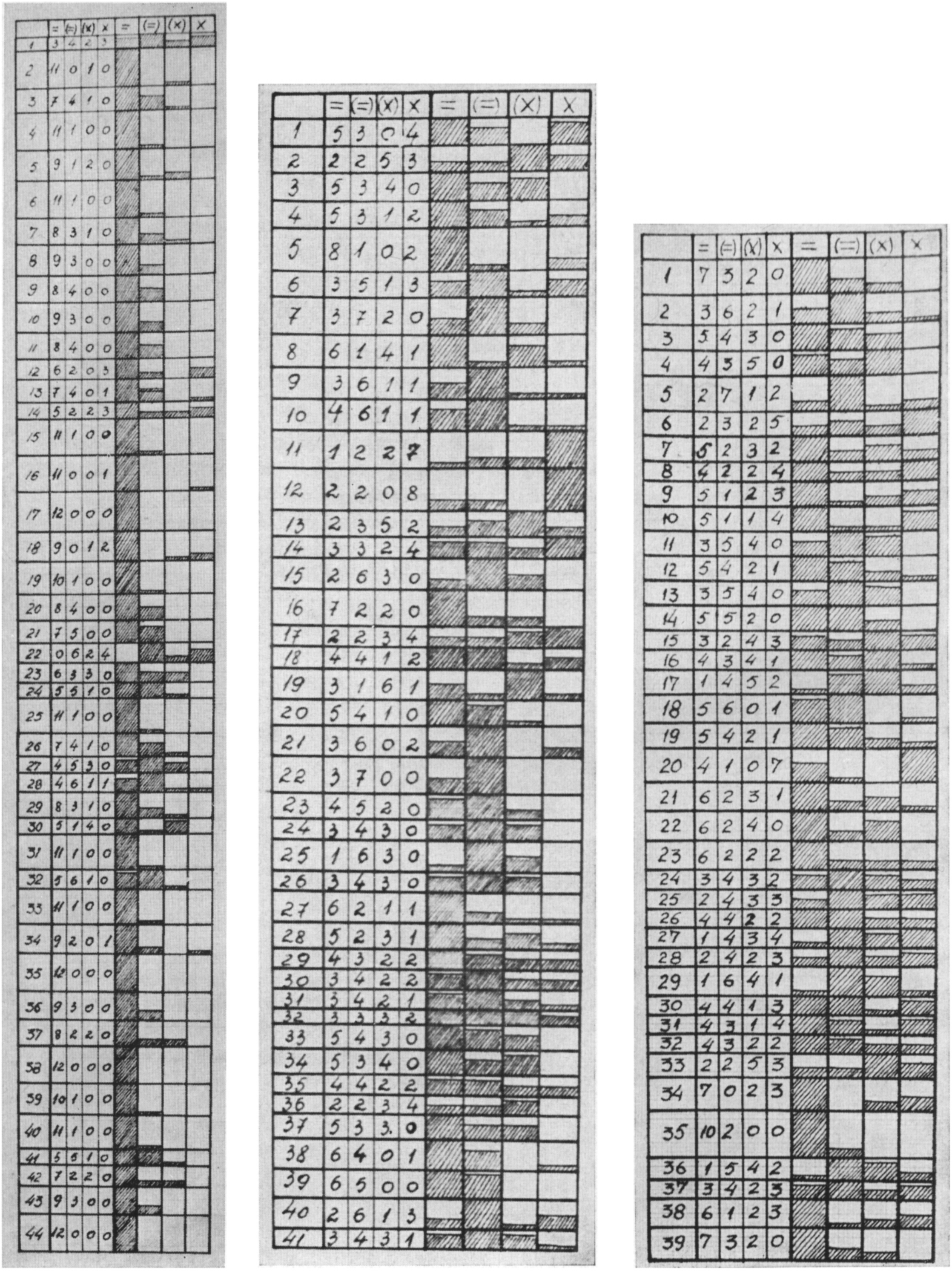
The subsequent h^2 analysis allows to tentatively classify the 12 primary impulses as follows:

1) Danger-avoiding, parental, combative and constructive impulses have the greatest h^2 values: 0.89, 0.81, 0.80 and 0.79, respectively, with an environmental component of 0.11-0.21;

2) Sex, curiosity and repulsion impulses attain h^2 values of 0.76, 0.75 and 0.70, respectively, with an environmental component of 0.24-0.30, indicating a greater rate of peristatic mouldability;

Acta Genet. Med. Gemellol. (1970), 19: 291-293

https://doi.org/10.1017/S1120962300025725 Published online by Cambridge University Press



	=	(=)	(x)	x
1	3	4	2	3
2	11	0	1	0
3	7	4	1	0
4	11	1	0	0
5	9	1	2	0
6	11	1	0	0
7	8	3	1	0
8	9	3	0	0
9	8	4	0	0
10	9	3	0	0
11	8	4	0	0
12	6	2	0	3
13	7	4	0	1
14	5	2	2	3
15	11	1	0	0
16	11	0	0	1
17	12	0	0	0
18	9	0	1	2
19	10	1	0	0
20	8	4	0	0
21	7	5	0	0
22	0	6	2	4
23	6	3	3	0
24	5	5	1	0
25	11	1	0	0
26	7	4	1	0
27	4	5	3	0
28	4	6	1	1
29	8	3	1	0
30	5	1	4	0
31	11	1	0	0
32	5	6	1	0
33	11	1	0	0
34	9	2	0	1
35	12	0	0	0
36	9	3	0	0
37	8	2	2	0
38	12	0	0	0
39	10	1	0	0
40	11	1	0	0
41	5	5	1	0
42	7	2	2	0
43	9	3	0	0
44	12	0	0	0

a) MZ twin pairs

	=	(=)	(x)	x
1	5	3	0	4
2	2	2	5	3
3	5	3	4	0
4	5	3	1	2
5	8	1	0	2
6	3	5	1	3
7	3	7	2	0
8	6	1	4	1
9	3	6	1	1
10	4	6	1	1
11	1	2	2	7
12	2	2	0	8
13	2	3	5	2
14	3	3	2	4
15	2	6	3	0
16	7	2	2	0
17	2	2	3	4
18	4	4	1	2
19	3	1	6	1
20	5	4	1	0
21	3	6	0	2
22	3	7	0	0
23	4	5	2	0
24	3	4	3	0
25	1	6	3	0
26	3	4	3	0
27	6	2	1	1
28	5	2	3	1
29	4	3	2	2
30	3	4	2	2
31	3	4	2	1
32	3	3	3	2
33	5	4	3	0
34	5	3	4	0
35	4	4	2	2
36	2	2	3	4
37	5	3	3	0
38	6	4	0	1
39	6	5	0	0
40	2	6	1	3
41	3	4	3	1

b) DZ twin pairs

	=	(=)	(x)	x
1	7	3	2	0
2	3	6	2	1
3	5	4	3	0
4	4	3	5	0
5	2	7	1	2
6	2	3	2	5
7	5	2	3	2
8	4	2	2	4
9	5	1	2	3
10	5	1	1	4
11	3	5	4	0
12	5	4	2	1
13	3	5	4	0
14	5	5	2	0
15	3	2	4	3
16	4	3	4	1
17	1	4	5	2
18	5	6	0	1
19	5	4	2	1
20	4	1	0	7
21	6	2	3	1
22	6	2	4	0
23	6	2	2	2
24	3	4	3	2
25	2	4	3	3
26	4	4	2	2
27	1	4	3	4
28	2	4	2	3
29	1	6	4	1
30	4	4	1	3
31	4	3	1	4
32	4	3	2	2
33	2	2	5	3
34	7	0	2	3
35	10	2	0	0
36	1	5	4	2
37	3	4	2	3
38	6	1	2	3
39	7	3	2	0

c) Pairs of siblings

Fig. 1. Degrees and number of concordances and discordances for 12 primary impulses in a sample of (*a*) 44 MZ twin pairs, (*b*) 41 DZ same-sexed twin pairs, and (*c*) 39 pairs of same-sexed siblings.

https://doi.org/10.1017/S1120962300025725 Published online by Cambridge University Press

3) Submissive, food-seeking, acquisitive, self-assertive and gregarious impulses attain the least h^2: 0.64, 0.64, 0.60, 0.59 and 0.57, respectively, with an environmental component of 0.36-0.43.

So far, we have been unable to distinguish genetically one impulse from another. Surprisingly, twin data indicate that the genetic component is highest in the first category, preponderating especially in the self-preservation impulse.

In conclusion, no impulse is completely determined by either heredity or environment. Roughly, the character's phenotype falls somewhat more within the nature's compass than within the nurture's one.

The present evidence (still at the exploratory level) would show that, although some docile aspects are impressible by nurture, human character is not at birth a hollow shell, as Locke would have it; and it is, at the same time, against the all popular (although professionally deeply rooted) neobehavioristic idea of a measureless mouldability of the human character.

Prof. G. Oancea-Ursu, Str. G. Lazar, Bloc F1, Ap. 1, Scara A, Timisoara, Romania.