THE CLINICAL SIGNIFICANCE OF SOCIAL MATURITY.*

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A WELL-KNOWN novelist recently made the cogent statement that nothing that happens is important except as it happens to some person. Just as there is no sound without an ear to hear it, so there is no behaviour without some person to observe or experience it. We may elaborate this thought into the dogmatic statement that no behaviour is important except in terms of its social value. While this is not strictly true of those intimate experiences which take place within the self as a unique organism, nevertheless even such intimate personal behaviour is irrelevant to everyone else except in terms of its social impact.

It is obvious that the clinical psychologist must be gravely concerned with the social meaning of behaviour, and in his analysis of any individual he must constantly evaluate the detailed characteristics and capabilities of the individual in terms of their ultimate social significance. Consequently the study of intelligence, personality, emotionality, habit, skill, and the entire gamut of clinically significant traits, must be pursued with reference to the ultimate composite capitalization of such traits for socially significant conduct.

It follows that the measurement of social status as such, and the tracing of social developmental histories, is a matter of the utmost clinical significance. Such measurement of social competence must take account of the component elements and their synthesis in various patterns which influence social adjustment. It becomes desirable, then, to measure social development as such, avoiding as far as practicable the direct measurement of these contributing factors, and appraising their net effects rather than themselves as elements.

It is rather astonishing that fifty years of genetic psychology has not produced a standard system for evaluating genetic progress in social functions. Psychology has been slow to exploit its greatest opportunity, namely, the experimental mapping of the evolutionary development of behaviour from infancy to adult life in the human species. Most of our psychology is confined to the experimental study of college graduate students who represent the upper done intellectual limits of the adult population. Important work has been with various types of sub-human organisms, and we have recently witnessed

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an extraordinary activity in the infant or pre-school human group. Yet, the remarkable work of G. Stanley Hall and Alfred Binet has had few significant exploiters. The comprehensive study of individual differences promoted by Sir Francis Galton, and the genetic study of both human and sub-human subjects are still relatively unexplored fields.

Our own recent work on the measurement of social maturity has already been presented in other places.* It is unnecessary for present purposes to recapitulate those reports. Briefly, we have prepared a genetic scale of social maturity which aims to measure the development of social competence from birth to adult years. This scale is patterned after the Binet scale for measuring intelligence, and closely follows the general principles on which that highly successful instrument was constructed. Just as each item in the Binet scale aims to measure intelligence through the central processes of comprehension and judgment, so the items of our scale aim to measure social competence by measuring successive degrees of social independence. As the items of the Binet scale reflect a central influence of intelligence which is expressed in some specific activity, so our central theme of social ability must have some particular vehicle. It is important at the outset to insist that the vehicle, namely, the specific acts, is not so important as its freight, the social independence which it conveys.

A first formulation of this scale and a tentative manual of directions are now in print. The formulation of items, as well as their arrangement and definition, is by no means final. On the contrary, work is proceeding toward a more elaborate explanation of the method as well as experimental refinements of the items. In its present form, however, the scale is known to be reasonably sound for investigational purposes. Many years of work will be required to accomplish an effective standardization and an adequate evaluation of the numerous variables. Meanwhile, even in its present form the scale provides a practical means of evaluating individual social competence, and an instrument for investigating many types of research problems. (See table entitled "Calibration of Items", p. 776.)

Attention is especially called to the possibility of expanding the scale in particular areas. In the present formulation there is an ample number of items in the pre-school range where our knowledge of social behaviour is most definite, and where individual differences are least extensive. The number of items decreases in the late periods of early childhood, and especially during the period of adolescence. This is partly due to the rather rapid decline in the

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"The Measurement of Social Competence." Presented before the American Association on Mental Deficiency. Publication anticipated in the *Annual Proceedings of the American Association on Mental Deficiency*, 1935.

"The Vineland Social Maturity Scale: Manual of Directions." Published in the *Training School Bulletin*, vol. xxxii, Nos. 1–4, March–June, 1935.

rate of social growth, coupled with the increasing scope and variety of social behaviour. The number of items is seriously limited in the superior adult level, and this affects the measurement of average adult level as well. It is feasible to consider certain areas of the scale separately, such as for the measurement of adolescent social status, or that of adult social status. This undertaking, however, will not prove so easy as may at first appear. It is relatively easy to suggest apparently significant behaviour items, but when these are generalized so as to avoid the influence of such variables as sex, specific opportunity, intelligence, achievement skill, motivation, and so on, it will be understood why we have not been more immediately successful on the same problem.

The original scale was built on the year-scale principle. To avoid the difficulties of allocating items to specific year-groups we have now arranged the scale merely as a progressive series. The actual position of any single item in this series is relatively unimportant, since the scale as a whole is applied by grouping similar items in series, and by pursuing each series with a given subject throughout the range of reasonable possibilities. The only weakness of calibration that need be feared is the possibility of a scarcity of items in some ranges and an abundance of items in others. Actually, the present formulation is the result of a considerable amount of preliminary work, but little has yet been done toward precise calibration. Recent work toward standardization has already indicated which items are probably inaccurately placed by more than one year. As standardization continues, it will be easy to rearrange the items, and to make substitutions for those which fall short of satisfying the criteria for inclusion in the scale as a whole.

Our present interest is to suggest some of the uses to which this instrument can be put, and to indicate some of the directions in which further investigational work may well proceed. The point of view in the following discussion is primarily that of the clinical psychologist interested in the clinical appraisal of individuals in relation to their social adjustment. The allusions to research possibilities also bear on problems of social importance to clinical psychologists.

The scale provides an instrument for measuring social status in terms of progressive maturity on a normative life-age basis. It is a reasonably standard objective device, and the results obtained with it can be interpreted both quantitatively and descriptively. Obviously the clinician will be prepared to evaluate the results obtained in terms of the total clinical study of each individual, and will not use the results by mere rule-of-thumb statistical interpretation.

The scale provides a measure of social level as an absolute index of present status. This index of level may be converted into a relative index of brightness; that is, the social age score may be converted into a social quotient. This quotient gives an index of relative social development which may have some value for prognosis. There is reason to believe that the social ages and the

social quotients may have much the same significance as Binet mental ages and Binet intelligence quotients.

The scale provides a measure of basic significance in the clinical study of social dependency, as, for example, in subjects with mental deficiency, psychopathic states, maladjustment, crippling, blindness, deafness, delinquency, economic dependency, and so on. The social status of the individual provides a definite point of departure on which ultimate diagnosis may be based, assuming that the significance of social status will be interpreted in the light of the entire clinical case study. Thus, the current confusion in distinguishing between the intellectually subnormal who are feeble-minded and those who are not feeble-minded becomes definitely possible—a distinction which is of the utmost importance for special classes in the public schools and for commitment to public institutions. The initial purpose of the scale was to provide a measure of social competence in order to satisfy the primary criterion of mental deficiency, and to do this in developmental terms so as to satisfy the criterion of arrested development.

The scale makes possible repeated measurements of social status in the same terms. This provides a means of evaluating growth, improvement, or deterioration. The scale also provides a means of determining social arrest, or relative deterioration as compared with absolute deterioration.

In this connection it is important to note that the scale may be used as a measure of " insight " by obtaining a measure of social status from the subject acting as his own informant. It will be noted that the scale does not provide a direct examination of the subject by laboratory techniques, but does so by a standardized interview method. The subject is examined by proxy through an informant who is intimately familiar with his capabilities. However, under certain conditions the subject may be used as his own informant, and this provides a measure of his insight into his own capabilities. This in itself provides a secondary index of social maturity by determining the point at which an individual is able to appraise himself, or the extent to which he can do so accurately. This is of special importance with the high-grade feeble-minded, with epileptics, and with psychotics and psychopaths. Among normal subjects it may provide an antidote for inferiority or superiority complexes !

The scale provides a means for evaluating the social effects of race, colour, nationality and cultural groups. It can be used, for example, in the study of primitives to determine socially significant forms of behaviour for social groups other than our own, using the behaviour of our own group as a standard. The scale, therefore, also provides some measure of the effect of customs and other cultural characteristics according to time and place as well as according to cultural level. For this purpose it is not necessary that the scale be valid for the measurement of other cultural groups except as indicating the nature and extent of their divergence from our generalized norms. This suggests, incidentally, an important caution, namely, it is not intended that the scale

be specifically applicable to any individual or group with reference to the generalized form. Thus, if a person be crippled, our first interest is not to make allowance for the effects of such crippling, but rather to measure the social competence of such a person absolutely, and then interpret that competence in relation to accompanying circumstances.

It seems unnecessary to mention the numerous other uses to which this instrument can be put—for example, as an aid in vocational guidance, in educational adjustment, in child training, in parent training, in self-evaluation and so on. In these directions it is necessary only to suggest that the scale provides a definite schedule of socially significant items which is representative rather than exhaustive, but which may be used retrospectively in taking a developmental history, and prospectively as suggesting a guide for further progress. Most important of all, the scale provides a measure of social status which may be used as a basic criterion for a wide variety of significant investigations in any field of social science.

Preliminary Experimental Results.

The experimental validation of this scale is now in progress.* It has not yet been standardized extensively for normal subjects. Our work up to the present has been of a preliminary nature, such as studying the numerous variables, and laying foundations for the analysis of larger bodies of data later. We have also experimented with some of the uses to which the scale may be put. The results obtained so far are of some interest as indicating probable reliability, validity and practicability.

The following is the tentative conversion table used for calculating the "social age" from the scores:

Age.	Score.		Age.	Score.
1.0	15	..	11.0	76
2.0	31	..	12.0	79
3.0	42	..	13.0	82
4.0	48	..	14.0	85
5.0	54	..	15.0	88
6.0	60	..	16.0	91
7.0	66	..	17.0	94
8.0	69	..	18.0	97
9.0	72	..	19.0	99
10.0	74	..	20.0	102
			30.0	112

Normal Subjects.

Preliminary results have been obtained with 54 normal subjects, about equally divided as to sex, ranging from life age 1 year to life age 26 years.

* Since this was written we have completed a preliminary standardization based on 600 normal subjects as well as differential standardization on 300 mentally deficient subjects. These results are now being prepared for publication.

These subjects represent the upper quartile of social-economic status as indicated by occupations of the fathers and cultural level of the family. The median L.A. (life age) of this group was 7·8 years; the median S.A. (social age as obtained by the scale) was 8·8 years; median S.Q. (social quotient) was 117 ± 6. The median superiority of 1 year in S.A. and of 17 points in S.Q. coincides with the superiority of social-economic selection. Several superior adults above L.A. 30 were also examined, and these results coincide with independent estimates of these subjects.

The analysis of sex differences (normal subjects) shows the median S.Q. of the females at 3 points above the corresponding median for the males. This difference is not statistically significant, and the results in general according to sex show no definite trend in direction or amount at progressive age levels.

The correlation between L.A. and S.A. for these 54 cases is R. = ·91, showing a close parallelism between social score and L.A.

The correlation between L.A. and S.Q. (calculating adult quotients on an adult average of 25 years) is $r = -·27$. This correlation indicates that the scoring is either too generous in the lower levels or too severe in the upper levels, or that the subjects are not unselected as to social maturity throughout the age range. The social scores increase consistently up to 25 years, but the social ages in the upper life ages are relatively lower than in the lower life ages.

The social scores were correlated with parental estimates of social ability, but this analysis is not significant, because most of the children were rated "at age" due to parental modesty.

Sixteen sets of siblings were studied where there were 2, 3 and 4 children in the same families. These results showed normal individual differences within a narrow range in a given family. The families themselves were too much alike in cultural status to reveal important differences. Two sets of non-identical twins of unlike sex in this group showed S.Q. differences of 7 points each; one pair of dizygotic twins of like sex gave S.Qs. 1 point apart; one pair of monozygotic twins gave identical results on all items.

Four normal subjects whose intelligence quotients were available gave S.Qs. 20 points above their I.Qs., all of these being in the lower life-age groups. One normal subject gave an S.Q. 16 points below his I.Q.

Several normal subjects were examined by the self-scoring method, that is, using the subject as his own informant. These scores ran rather higher than those obtained by the usual method, but not markedly. These subjects were beyond 15 years of age.

Developmental social histories were obtained with several normal subjects, using the scale as a developmental schedule. In using the scale in this manner, the informant is asked to state the age at which the item in question first became habitually successful. These results demonstrate the practicability of using the scale for this purpose, but few informants seem able to give reliable information of this kind.

Mentally Deficient Subjects.*

Results have been obtained with 223 mentally deficient (feeble-minded) subjects, ranging in L.A. from 5 to 70 years, with M.As. from 1 to 15 years. This group is a representative selection of about half of the inmate population of the Training School at Vineland. As will be indicated later, no significant differences were found according to sex or according to clinical type. The results have, therefore, been treated as a whole.

The median L.A. of this group was 21 years; median Stanford Binet M.A. 7·1 years; median S.A. 8·3 years; median I.Q., 53; median S.Q., 47. It is significant that the S.A. scores average 1·2 years higher than the M.A. scores. The S.Qs., however, average 6 points lower than the I.Qs. These quotient differences are influenced by the adult age-level divisors, 14 and 25 years.

Each informant, after giving the information for purposes of the scale, was asked to give an estimate of the social ability of the subject just examined in terms of L.As. of normal children. The median of these estimated S.As. was 7·3 years. This is ·2 year higher than the median M.As. and 1·0 year lower than the median S.As., revealing a tendency for the informants to estimate social age according to intelligence rather than according to social ability.

Other results for these mentally deficient subjects were as follows:

Correlations.—The correlation between M.A. and S.A. was $r = \cdot 89$; between L.A. and S.A. was $r = \cdot 13$; between M.A. and L.A. was $r = \cdot 15$; between I.Q. and S.Q. was $r = \cdot 81$; between L.A. and S.Q. was $r = -\cdot 23$; between L.A. and I.Q. was $r = \cdot 04$. These correlations show a very high relationship between M.A. and S.A. and between I.Q. and S.Q. The slight negative relationship between L.A. and S.Q. when allowed for, increases the I.Q.-S.Q. correlation to $r = \cdot 84$.

Differences.—A study of differences between S.As. and M.As. shows that the S.As. are approximately equal to the M.As. up to M.A. 4. Thereafter the S.As. become increasingly higher than the M.As., with an ultimate median difference of 2 years. The median of the differences between M.A. and S.A. is $+1 \cdot 4$ years $\pm$ 1·3 years, in favour of S.A. The range of these differences is from $-3 \cdot 5$ to $+5 \cdot 5$ years. The S.Qs., on the other hand, are approximately equal to the I.Qs. up to I.Q. 25. Thereafter, they average about 5 points *below* the I.Qs. up to I.Q. 65, which is their final general average. The median of the differences between I.Q. and S.Q. is $-4 \cdot 5$ points $\pm$ 8·0 points, in favour of I.Q. The range of these differences is from -50 points to $+20$ points.

This fact of high I.Q. associated with low S.Q. among feeble-minded subjects suggests the importance of social competence as a critical difference between

* The term "feeble-minded" in this article follows the U.S. usage as synonymous with "mentally deficient" rather than the British usage which is equivalent to "moron" in the U.S.

feeble-mindedness and intellectual subnormality. As will be seen later, intellectually subnormal subjects who are not mentally deficient tend to have low I.Qs. associated with high S.Qs.

Further analysis in terms of L.A. shows that the M.As. are closely similar to the corresponding S.As. up to L.A. 15. Thereafter the M.As. do not increase, whereas the S.As. increase to approximately L.A. 20 years. Analysis of S.Qs. in relation to L.A. shows that the S.Qs. are closely similar to the corresponding I.Qs. up to L.A. 15, but thereafter the S.Qs. fall below the I.Qs. by an average of about 10 points. This is because the adult I.Qs. are calculated on the basis of 14 years and the adult S.Qs. on 25 years. The conclusion from this is that although the S.Qs. tend to run higher than the M.As., the S.Qs. run lower than the I.Qs., indicating that the adult feeble-minded are absolutely higher but relatively lower in social ability as compared age for age with intelligence.

The relation of measured S.A. to estimated S.A. shows practical identity up to about M.A. 6 years. Thereafter the estimated S.As. average about 1 year below the measured S.As., thus revealing a tendency on the part of the informants to underestimate ability in the higher S.A. levels.

Sex differences.—An analysis of sex differences was made of 116 male subjects compared with 73 female subjects. The sex differences showed no consistent trend in superiority of S.A. over M.A., either in amount or direction.

Special groups.—As stated previously, a study of social ability in relation to clinical type showed no important divergences from the subnormal group as a whole except for M.A. differences in clinical type.

Eighteen subjects with various degrees of crippling as a result of birth injuries showed L.A. 29·0, M.A. 8·0, and S.A. 9·0. We had anticipated that the S.As. of these crippled subjects would be seriously reduced because of their physical handicaps. This is true in the most seriously handicapped wheel-chair patients, although even in these subjects the difference between M.A. and S.A. is not markedly greater than among other subjects. We were even more surprised to find that the highest differences in favour of social ability (as compared with M.A.) were found among these crippled cases. In other words, the cripples showed a wider *range* of differences, but not a marked difference in central tendency. The median of the M.A.–S.A. differences in this group was $+ 1{\cdot}5 \pm 1{\cdot}8$.

Fifteen psychopathic and emotionally unstable subjects showed median L.A. 23·9, M.A. 7·2, S.A. 6·9. Here, again, the median difference between M.A. and S.A. is not markedly different from the subnormal group as a whole. Moreover, the differences between S.A. and M.A. do not cover a very wide range. However, the *direction* of difference is toward S.A. inferiority.

Fourteen mongol subjects showed median L.A. of 20·2, M.A. 3·0, S.A. 4·3. In these subjects the difference between M.A. and S.A. is lower than for the group as a whole, but this is because the mongols fall in the lower M.A. group, where mental and social ability are approximately equal.

Reliability.—A study of reliability was made by observing the extent to which the results were influenced by differences in examiners and informants.

Fifteen subjects were re-examined by the same examiner, using two informants. The median difference of the two examinations was $0 \pm .6$ years, with an extreme range of difference from -2.3 to $+1.7$. These subjects were median L.A. 16·7, M.A. 7·7, S.A. 8·1.

Fifteen subjects were re-examined by two examiners, using the same informant. These results showed a median difference of $+.2 \pm .4$ years, with an extreme range of $-.7$ to $+2.3$. These subjects were median L.A. 15·6, M.A. 5·1, S.A. 4·7.

Self-scoring.—Three subjects were examined as their own informants and were then re-examined through other informants. In each case the self-scoring was between 1 and 2 years higher than the standard scoring.

Discharged patients.—Five subjects were studied whose classification had been changed from high-grade patient to full-time employee status in our institution or elsewhere. All of these subjects scored S.As. between 18 and 20 years, whereas the highest S.A. of our other institution subjects was 17 years. (Eighteen years has for other reasons been assumed as the lower borderline S.A. limit for normal adults.) Only one inmate subject was penalized seriously by environmental restrictions. This was a girl of L.A. 31, M.A. 15, S.A. 17·8, whose S.A. rose to 19·0, when full credit was allowed for + N.O. items.

Special class study.—A study was made of 8 subjects in a special class for subnormals in the Vineland public schools. The problem was to see whether there may be differences in S.A. which determine whether a child is placed in a special class rather than in an institution. We were interested also to see if we could distinguish between the feeble-minded and the intellectually subnormal of school age (the so-called social moron *versus* the intellectual moron). We were further interested to see the extent to which the teacher was informed as to the child's social ability, and the extent to which the mothers of subnormal children might be used as reliable informants. S.As. were obtained from each subject as his own informant as well as from the teacher and the mother of each subject. For these 8 subjects the average L.A. was 14·5, average M.A. 9·3, average S.A. 10·7 (parent as informant), average I.Q. 66, average S.Q. 87. Whereas in the institutional group the S.Q. averaged 6 points *below* the I.Q., in this group the S.Q. was 20 points *above* the I.Q. The results obtained from subject, teacher and parent informants were substantially alike, showing that these children have good insight into their own social capabilities, and that the teachers also are well informed. A study of the individual subjects suggests that when low I.Q. is accompanied by low S.Q. the subject is most probably feeble-minded, but that when low I.Q. is accompanied by high S.Q., the subject is most probably intellectually subnormal.

Admission study.—A study was made of 10 subjects to see how practicable

the method might be with new institutional admissions. Scores were obtained on children resident in the institution for a period of about two weeks. The M.As. and S.As. are remarkably alike, and the central tendencies for this group do not differ materially from those obtained in the institution at large. This suggests the practicability of obtaining an early understanding of the social capabilities of newly admitted patients. We were not able to carry out our plan to study S.As. obtained from parents prior to admission of their children.

Validity.—A study of validity was made by obtaining a ranking of 100 male subjects by the Boys' Supervisor, 85 female subjects by the Girls' Supervisor, 200 subjects of both sexes by the Director of Education, and 200 subjects of both sexes by the Chief Clinician. The results of this study are too involved for brief presentation. They show marked divergences in individual cases between the ranks given by these persons and the ranks obtained by the scale. These differences range from a percentile rank difference of + 35 to − 56, with an average percentile rank difference of ± 10. This study shows a definite tendency toward under-estimation of social ability by large amounts in a few cases, and toward over-estimation of small amounts in many cases. It indicates very clearly the value of the scale in discovering the unobtrusive individual whose social ability is likely to be grossly under-estimated. It also reveals a tendency to estimate social competence in terms of social *usefulness* rather than in terms of social independence. This suggests the important conclusion that one tends to estimate another person's social competence in terms of his value to society rather than in terms of his own ability to look after himself.

Scaling for normal subjects.—A study was made of the calibration of the scale for normal subjects with reference to the progressive difficulty of the items. In view of the small number of normal subjects and their wide range in L.A., a satisfactory study could not be made. However, the total plus scores in each item were arranged in progressive sequence for the total normal group. This order was then compared with the original order. Comparisons were made of these two orders in terms of the shifts in location where an item was displaced by one or more years upward or downward. The items which according to this analysis are scaled too low and the amounts of their displacement in years are as follows:

20.	Eats with spoon	−1·2
55.	Plays simple table games	−1·0
63.	Uses table knife for cutting	−1·5
70.	Cares for self at table	−2·7
74.	Writes occasional short letters	−1·7
76.	Carries out written instructions	−1·7
78.	Does small remunerative work	−1·3
81.	Exercises complete care of dress	−1·3
86.	Engages in adolescent group activity	−1·0
87.	Buys own clothing accessories	−1·0
90.	Goes to nearby places alone	−1·7

Similarly, the items which are scaled too high are as follows:

59.	Uses skates, sled, wagon	+1·3
69.	Is trusted with money	+2·1
73.	Participates in pre-adolescent play	+2·7
74.	Uses tools or utensils.	+2·8
77.	Makes telephone calls	+2·3
80.	Makes minor purchases	+1·0
83.	Does simple creative work	+3·3
88.	Is left to care for self or others	+2·7
92.	Performs responsible routine chores	+1·7
93.	Employs eighth-grade arithmetic	+1·7

The average number of plus-minus scores for normal subjects was 1·5 per subject. The average number of + N.O. scores was ·9 for 55 subjects. The number of items representing the border-zone between continuous pluses and continuous minuses is about 15 to 20 items per normal subject. (See manual for scoring.)

Scaling for feeble-minded subjects.—A study of the calibration of the scale for feeble-minded subjects was made according to the percentages of passes for the 223 subjects of this group. The method consisted of classifying the subjects according to S.As., and calculating the percentage of passes for each item in each S.A. group. These percentages of passes were then summated for each item for the entire range of S.As., and the rank order of these summated percentages was taken as the order of difficulty for the items for feeble-minded subjects. This order of difficulty is as follows:

Calibration of Items. F.M. Subjects.

Scale No.	F.M. Rank order.	Normal. Rank order.	Items.
1	4·5	1	Grasps objects within reach.
2	4·5	2	Reaches for nearby objects.
3	4·5	4	Reaches for familiar persons.
4	4·5	5	Balances head.
5	4·5	6	"Crows"; laughs.
6	4·5	8	Sits unsupported.
7	4·5	9	Grasps with thumb and finger.
8	4·5	14	Drinks from cup or glass assisted.
9	10	3	Rolls over.
10	10	10	Moves about on floor.
11	10	13	Occupies self unattended.
12	13	7	Pulls self upright.
13	13	12	Stands alone.
14	13	16	Walks about room unattended.
15	15	32	Gives up baby carriage.
16	16	26	Drinks from cup or glass unassisted.
17	17	30	Masticates food.
18	18·5	11	"Talks"; imitates sounds.
19	18·5	15	Pulls off socks.
20	20	39	Walks upstairs unassisted.
21	21	20	Eats with spoon.
22	22	21	Follows simple instructions.
23	23	17	Does not drool.
24	24	18	Demands personal attention.
25	25	27	Discriminates edible substances.
26	26	25	Transfers objects.
27	27	29	Overcomes simple obstacles.

Calibration of Items. F.M. Subjects—cont.

Scale No.	F.M. Rank order.	Normal. Rank order.	Items.
28	28	34	Gets drink unassisted.
29	29	37	Removes coat or dress.
30	30	23	Goes about house or yard.
31	31	31	Asks to go to toilet.
32	32	22	Marks with pencil or crayon.
33	33	28	Unwraps candy.
34	34·5	19	Uses names of familiar objects.
35	34·5	33	Plays with other children.
36	36	44	Puts on coat or dress unassisted.
37	37·5	24	Talks in short sentences.
38	37·5	38	Avoids simple hazards.
39	39	40	Initiates own play activities.
40	40	35	Fetches or carries familiar objects.
41	41	47	Walks downstairs one step to tread.
42	42	51	Cares for self at toilet.
43	43	50	Buttons coat or dress.
44	44	41	Eats with fork.
45	45	43	Dries own hands.
46	46	46	Plays co-operatively at kindergarten level.
47	47	48	Helps at little household tasks.
48	48	36	Cuts with scissors.
49	49	49	Washes hands unaided.
50	50	56	Dresses self except tying.
51	51	45	Relates experiences.
52	52	57	Uses table-knife for spreading.
53	53	53	Washes face unassisted.
54	54	42	" Performs " for others.
55	55	61	Bathes self assisted.
56	56	63	Uses table-knife for cutting.
57	57	58	Uses pencil or crayon for drawing.
58	58	59	Uses skates, sled, wagon.
59	59	52	Goes about neighbourhood unattended.
60	60	70	Cares for self at table.
61	61	54	Prints simple words.
62	62	67	Combs or brushes hair.
63	63	66	Plays competitive exercise games.
64	64	71	Does routine household tasks.
65	65	64	Goes to bed unassisted.
66	66	55	Plays simple table games.
67	67	60	Goes to school unattended.
68	68	68	Disavows literal Santa Claus.
69	69	62	Uses pencil for writing.
70	70	73	Participates in pre-adolescent play.
71	71	75	Uses tools or utensils.
72	72	72	Bathes self unaided.
73	73	65	Tells time to quarter hour.
74	74	69	Is trusted with money.
75	75	74	Writes occasional short letters.
76	76	81	Exercises complete care of dress.
77	77	78	Does small remunerative work.
78	78	76	Carries out written instructions.
79	79	80	Makes minor purchases.
80	80	83	Does simple creative work.
81	81	79	Goes about home town freely.
82	82	77	Makes telephone calls.
83	83	88	Is left to care for self or others.
84	84	82	Answers ads.; purchases by mail.
85	85	92	Performs responsible routine chores.
86	86	85	Plays difficult games.
87	87	89	Maintains several correspondents.

Calibration of Items. F.M. Subjects—cont.

Scale No.	F.M. Rank order.	Normal. Rank order.	Items.
88	88	90	Goes to nearby places alone.
89	89	84	Employs sixth grade literacy.
90	90	87	Buys own clothing accessories.
91	91	86	Engages in adolescent group activities.
92	92	91	Goes out unsupervised daytime.
93	93	96	Goes to distant points alone.
94	94	94	Has own spending money.
95	95	98	Looks after own health.
96	96	95	Buys all own clothing.
97	97	99	Has a job or continues schooling.
98	98	97	Goes out nights unrestricted.
99	100	100	Has complete control of own money.
100	100	106	Reads for improvement.
101	100	108	Performs skilled work.

The data were too limited for items 102 to 117, but for the sake of completeness they are given below:

102	Contributes to support of others.	110	Directs own affairs.
103	Discusses serious topics.	111	Inspires confidence in others.
104	Uses money providently.	112	Displays initiative in occupation.
105	Engages in beneficial recreation.	113	Purchases for others.
106	Reads for improvement.	114	Considered asset to community.
107	Provides for future.	115	Performs expert or professional work.
108	Performs skilled work.	116	Directs or manages work of others.
109	Supports social welfare movements.	117	Advances general welfare.

The average number of plus-minus scores for feeble-minded subjects was ·6 such scores per subject. The average number of + N.O. scores was 1·7 such scores per subject. The range of border-zone examining, that is, between continuous plus scores and continuous minus scores, was 30 to 40 items per subject, or about twice the range found among normals.

Differential scaling.—A comparison was made of the scaling for feeble-minded subjects as compared with normal subjects. This was done by computing the year-value of each item for normals, and comparing this with the corresponding year-value for defectives. From this study it is possible to determine items which are comparatively difficult for defectives as compared with normals, and also those which are comparatively easy.

Items which are comparatively difficult for the feeble-minded and the amount of such difficulty expressed as one or more years' displacement are as follows:

19.	Uses names of familiar objects	−1·1
24.	Talks in short sentences	−1·0
36.	Cuts with scissors	−1·6
42.	"Performs" for others	−2·0
45.	Relates experiences	−1·0
54.	Prints simple words	−1·2
55.	Plays simple table games	−1·8 (−·8)
60.	Goes to school unattended	−1·3
62.	Uses pencil for writing	−1·7
65.	Tells time to quarter hour	−2·7
69.	Is trusted with money	−2·0 (−4·1)
77.	Makes telephone calls	−1·7 (−4·0)
84.	Employs sixth-grade literacy	−1·7
86.	Engages in adolescent group activities	−1·7 (−0·7)
87.	Buys own clothing accessories	−1·0 (0)

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The items which are easy for feeble-minded subjects by one or more years' displacement are as follows:

32.	Gives up baby carriage	+1·1	
39.	Walks upstairs unassisted	+1·4	
50.	Buttons coat or dress	+1·2	
51.	Cares for self at toilet	+1·5	
56.	Dresses self except tying	+1·0	
63.	Uses table-knife for cutting	+1·2	(+2·7)
70.	Cares for self at table	+2·3	(+5·0)
75.	Uses tools or utensils.	+1·8	(+1·0)
81.	Exercises complete care of dress	+1·8	(+3·1)
83.	Does simple creative work.	+1·0	(+2·3)
88.	Is left to care for self or others	+1·7	(+1·0)
92.	Performs responsible routine chores	+2·3	(+0·6)
96.	Goes to distant points alone	+1·0	
98.	Looks after own health	+1·0	

In each of these tables the amounts of displacement expressed in parenthesis represent the difference which is found when the displacements in the original scale as indicated by the normal calibration are taken into account.*

+ *N.O. items.*—As has been stated elsewhere, it was expected that special difficulty would be encountered in applying this scale to subjects within an institution environment where lack of opportunity for some behaviour items is due to administrative restrictions which seem advisable or necessary. Allowance is made for this difficulty in the "Manual of Directions" by granting + N.O. credit for these items if there is sound reason to believe that the subject could successfully perform such items if the restrictions were not present. The "Manual" provides for — N.O. scores if there is reason to believe that such an item presumably would not be successfully performed if such restrictions were removed.

An analysis of the + N.O. scores for the 223 feeble-minded subjects shows a total of 386 such scores, or an average of 1·7 per subject. The average number of such scores is 1 item per subject for S.As. below 10 and 3 items per subject above S.A. 10. The scoring system provides that + N.O. scores receive full credit in the range of continuous pluses, no credit within the range of continuous minuses, and half credit between these limits. Therefore, it will be seen that the average penalty resulting from restrictions of the institution environment seldom changes a given score by more than one full item.

The following table shows the items which received + N.O. scores and the total number of such scores per item:

36.	Cuts with scissors	6
41.	Eats with fork	5
52.	Goes about neighbourhood unattended	4
57.	Uses table-knife for spreading	9
60.	Goes to school unattended	40
63.	Uses table-knife for cutting	6
64.	Goes to bed unassisted	10
69.	Is trusted with money	41

* These data are illustrative only. In our further work we are employing much more precise calibration methods which give more reliable results than these.

70.	Cares for self at table	5
72.	Bathes self unaided	6
77.	Makes telephone calls	51
78.	Does small remunerative work	5
79.	Goes about home town freely	42
80.	Makes minor purchases	28
87.	Buys own clothing accessories	23
88.	Is left to care for self or others	15
90.	Goes to nearby places alone	19
91.	Goes out unsupervised daytime	16
94.	Has own spending money	6
95.	Buys all own clothing	5
96.	Goes to distant points alone	3
97.	Goes out nights unrestricted	2
98.	Looks after own health	20
100.	Has complete control of own money	1

A careful analysis of these items shows that there are always some subjects with whom these restrictions are not enforced. This is because experience with these particular subjects has justified the wisdom of relaxing the restrictions in their case. Actually, these items cover a range of social ages within which the subjects move from complete restriction to no restriction. This analysis demonstrates that, in the main, the restrictions are imposed because of the hazards involved on the part of subjects who presumably would not succeed in these respects. For example:

Item 36, " Cuts with scissors ", shows a range of development from S.A. 2 years to S.A. 5 years, progressing from − N.O. through + N.O. to full + scores.

Item 41, " Eats with fork ", shows the same range.

Item 52, " Goes about neighbourhood unattended ", shows a range of S.A. 2 years to S.A. 8 years.

Similarly, the other items of the scale have been analysed to demonstrate the range during which these restrictions actually operate whether or not the restrictions seem advisable on the basis of other considerations.

S.A. and cultural level.—As our analysis proceeded, we were surprised to observe comparatively high S.A. scores among subjects of low social-economic status. There has previously been demonstrated a negative correlation between degree of mental deficiency and social-economic status of the family for institutionalized feeble-minded subjects. Our analysis in this problem gives the following results:

Social-economic status of the subject's family was determined from father's occupation according to the Minnesota occupational scale. On this scale professional and highly skilled occupations score I, unskilled labour occupations score VI, and other occupations are graded between. Our study showed 45 subjects of occupational grades I and II, and 36 subjects of occupational grade VI. The medians of the two groups are as follows:

Occupational groups.	L.A.	M.A.	S.A.	I.Q.	S.Q.
I and II	22	5·7	6·1	40	30
VI	20	8·6	11·3	60	55

A study of the M.A.–S.A. differences for subjects for occupational grades I and II showed S.A. superiority of $+ 1{\cdot}0 \pm 1{\cdot}0$ years, with a range of M.A.–S.A. of $- 4{\cdot}0$ to $+ 5{\cdot}5$. The corresponding study of occupational grade VI showed S.A. superiority of $+ 2{\cdot}1 \pm 1{\cdot}3$ years, with a range of M.A.–S.A. of $- 3{\cdot}0$ to $+ 5{\cdot}0$.

These differences show that when mental age is held constant the S.As. of institutionalized feeble-minded subjects of inferior social selection are definitely above those of superior selection.

A similar study of I.Q.–S.Q. differences shows the subjects of superior selection with I.Q.–S.Q. differences of $- 9 \pm 12$ points, with a range of differences from $- 45$ to $+ 25$. Similar results for the subjects of inferior social selection show a median of I.Q.–S.Q. difference of $- 5 \pm 8$ points, with a range of $- 45$ to $+ 25$. Thus, these feeble-minded subjects of inferior social selection are found to have S.Qs. above the subjects of superior selection when I.Q. is held constant.

In both these instances the differences are increased when allowance is made for the average differences at specific M.A. and I.Q. levels.

The conclusion from this portion of our study is particularly significant in relation to the problem of nature *versus* nurture. That problem may be summarized as follows: (*a*) Subjects of inferior social selection usually have mental ages below those of superior selection; (*b*) feeble-minded subjects of inferior social selection tend to be high-grade (hereditary), whereas feeble-minded subjects of superior social selection tend to be low-grade (non-hereditary) with, therefore, higher mental ages among those of inferior social selection; (*c*) when mental age differences are held constant for feeble-minded subjects of inferior and superior social selection, the social abilities of the inferior groups are above those of the superior groups. This is in line with the general thesis that superior cultural status tends to prolong the period of social dependency.

Coloured subjects.—We are indebted to Miss Dorothy Bassett, of the Vineland State School, for a preliminary study of social ability in relation to colour. Ten coloured female patients at the Vineland State School, all of whom were sex delinquents, were compared with 11 white female patients, 7 of whom were sex delinquents. These subjects were all of low social-economic status. Medians for the two groups are as follows:

	L.A.	M.A.	S.A.	I.Q.	S.Q.	Occupational class.
White	25	8·8	12·5	66	54	V
Coloured	24	9·1	11·6	67	52	V

The median M.A.–S.A. difference was 3·6 years in favour of S.A. for the whites, and 2·9 years for the coloured. The median I.Q.–S.Q. difference was — 11 points for the whites, and — 14 points for the coloured.

No serious conclusions can be drawn from this study of negro feeble-minded

because of the limited number of cases, but the trends are of some interest. The results show the same general tendencies for social-economic selection as were found among the Training School subjects except that the amounts are larger. This may have been due in part to leniency in scoring. It was expected, however, that the coloured subjects might show S.As. relatively above those of the white subjects, since there is reason to believe from other evidence that the M.As. of coloured subjects are specifically below their social ability as compared with whites. Miss Bassett's results suggest a contradiction of this assumption.

Conclusion.—These experimental results, although based on meagre data, suggest preliminary indications as to the reliability, validity and uses of this scale. We plan to proceed at once toward an adequate normative standardization and more adequate study of the variables involved.

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