

AN ACHIEVEMENT MOTIVATION QUESTIONNAIRE

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A questionnaire for the measurement of McClelland's concept of achievement motivation is presented. The scale was derived by factor analysis and shows that most of the components of achievement motivation are loaded on a single factor. Norms for several groups are given. Three criterion groups of successful people scored significantly highly on the scale, namely entrepreneurs, professors and managers. The scale is uncorrelated with neuroticism or extraversion, or with any of Cattell's 16 personality factors with the exception of superego strength and surgency.

This paper reports a questionnaire measure of McClelland's (1961) concept of achievement motivation. This personality construct is at present measured by the TAT, which has certain disadvantages. The chief of these are the imperfect reliability from one scorer to another, the training which the scorer requires, and the onerousness of the process of scoring. Few would dispute that a questionnaire is in many ways a simpler instrument.

METHOD

The questionnaire was derived by factor analysis. Sixty-three questions designed to tap achievement attitudes were made up and assembled in a questionnaire. The questionnaire was then given to 583 male subjects consisting of 303 managers, 200 students and 80 junior naval officers. The results were then factor-analysed in the following steps: the principal components of the correlation matrix were extracted; the first two factors rotated to the normal varimax

Table 1. *Questions with the highest loadings*

Please circle either the 'yes' or 'no' against each answer. Please be sure to answer each question and decide one way or another even if it is hard to make a decision.

			Factor loadings
1. Do you find it easy to relax completely when you are on holiday?	Yes	No	0.26
2. Do you feel annoyed when people are not punctual for appointments?	Yes	No	-0.37
3. Do you dislike seeing things wasted?	Yes	No	-0.32
4. Do you like getting drunk?	Yes	No	0.34
5. Do you find it easy to forget about your work outside normal working hours?	Yes	No	0.45
6. Would you prefer to work with a congenial but incompetent partner, rather than with a difficult but highly competent one?	Yes	No	0.37
7. Does inefficiency make you angry?	Yes	No	-0.36
8. Have you always worked hard in order to be among the best in your own line?	Yes	No	-0.35

Scoring. Score 1 mark for 'yes' answers to questions 2, 3, 7, 8. Score 1 mark for 'no' answers to questions 1, 4, 5, 6.

criterion (orthogonal simple structure); and the varimax solution then rotated to oblique simple structure using the Hendrickson and Whyte promax technique.

This analysis yielded a factor which had the appearance of achievement motivation. The eight questions with the highest loadings on the factor are shown above, together with their loadings, and this has been used for the achievement scale.

VALIDITY OF THE ACHIEVEMENT SCALE

We turn first to attempts to validate the scale by showing that recognized high achievers score highly on it. Three groups of high achievers have been investigated and their scores compared with the norms, which for present purposes consist of the scores of male university students. These may seem atypical norms, which are hardly likely to be representative of the normal population. However, the scale is principally designed for use on people in executive, professional and managerial occupations, and it is probably reasonable to regard students as representative of these, except for the age factor which will be discussed presently.

The university students were a cross section reading a number of subjects obtained from the University of Exeter. The managers were a sample from a large marketing company; all the middle managers in the salary range £2,000–£5,000 p.a. (1967) in certain geographical areas were asked to fill in the questionnaire and 81 per cent did so. The ages of the managers ranged from 25 to 60. The junior naval officers were aged 19–22 and were a complete sample of a course at a naval college. All subjects were British.

The three criterion groups were made up as follows. The first was a group of 40 entrepreneurs who had set up their own companies and operated successfully for a period of at least 3 yr. This group was obtained because of McClelland's view that entrepreneurship is the most favoured way of life of the high achiever, so that in terms of McClelland's concept the validation of the questionnaire against entrepreneurs is crucial. The second group consisted of 28 university professors and was included as a criterion group of academic high achievers. It should be explained that the term professor is used in the British sense and corresponds roughly to the American term 'full professor'. It is a position attained by about one in ten of those who take up a university career in Britain. Not everyone would subscribe to the view that all professors are the highest academic achievers, but such difficulties are present in most criterion groups and it seems reasonable to regard professors as a whole as a high achieving group.

The third criterion group was a sample of managers who had achieved above average success. Each year the managers in the company are assessed by two superiors and as a result of these assessments they are from time to time promoted into higher grades. On this basis the managers were divided into 45 managers who had attained senior grades, and 258 managers in lower grades. We therefore have two groups of successful and less successful managers, and groups of students, junior naval officers, entrepreneurs and professors. The scores of all these groups on the questionnaire are shown in Table 2.

It seems reasonable to regard university students as the standard group with which to compare the others, since students are a sample of able young people who subsequently enter a variety of walks of life in which a wide range of success is achieved.

All three criterion groups score significantly higher on the test than the students. The *t* values are shown in Table 3, together with the value for the difference between students and naval officers.

It will be seen that all three criterion groups score significantly higher on the test than the students. Furthermore, the entrepreneurs score highest of all, which is in line with McClelland's work on achievement motivation. The difference between the entrepreneurs and the managers is also statistically significant ($t = 2.60$; $P < 0.05$).

Table 2. *Scores of various criterion groups on the achievement scale*

	University students	Naval officers	Senior managers	Average managers	Entrepreneurs	Professors
<i>n</i>	200	80	45	258	40	28
Mean	4.82	4.51	5.91	6.20	6.82	6.54
S.D.	1.56	1.40	1.11	1.10	1.58	1.46

Table 3. *Values of *t* for the difference between scores of university students and four other groups*

Criterion groups	<i>t</i>	<i>P</i>
Entrepreneurs	7.24	< 0.01
Professors	4.23	< 0.01
Senior managers	5.78	< 0.01
Naval officers	1.52	n.s.

It may be felt that the criterion groups differ from the students not only in achievement but also in age. To meet this objection, and also for the intrinsic interest of the association between achievement motivation and age, the correlation was computed for the entire sample of managers, whose ages ranged uniformly over the span of 25–60 yr. The correlation obtained was -0.007 , which is of course totally insignificant.

There is one discordant result and that is the failure of senior managers to score higher than average managers; indeed they score slightly, though insignificantly, lower. This result is not crucially damaging to the scale. McClelland himself has reported that top executives have lower achievement scores than middle executives, possibly because their achievement aspirations are satisfied. Our own senior managers, however, were not top men but more in the upper middle bracket, earning salaries of between £3,500 and £5,000 p.a. (1967). Another explanation may be that a large company like the one from which our managers were taken is probably not the ideal milieu for the high achiever. Promotion is based to a substantial degree, although not exclusively, on seniority and the retailing activities of the company are of a somewhat routine nature. In short, this company does not offer a great deal in the way of entrepreneurial challenge, risk-taking and knowledge of results which McClelland has emphasized as important for the high achiever. It may be expected that success in the company would be achieved by those with a moderate level of achievement motivation and strong administrative abilities, especially the competent supervision of routine operations. This supposition would be consistent with the results we have obtained.

CORRELATES OF THE SCALE

We turn next to the question of the correlates of the scale. The first to be examined were Eysenck's constructs of neuroticism and introversion-extraversion. Scores were obtained from 303 managers on short versions of Eysenck's questionnaire, derived by taking every fourth question from the latest version of the scale (Eysenck & Eysenck, 1965). A short version was given because of the heavy load of tests the subjects were taking at the time. Although a short version reduces the reliability of the questionnaire, it is doubtful whether this effect would be very serious. The correlations of the achievement motivation scale with neuroticism was +0.097 and with extraversion -0.003. Thus the achievement motivation scale appears to be independent of both neuroticism and introversion-extraversion.

In a further investigation the relation between the scale and Cattell's (1957) 16 personality factors was investigated. The subjects for this study were a new sample 140 male university students who were given the achievement scale and the 16 PF. The correlations obtained are shown in Table 4.

Table 4. *Correlations of the achievement motivation scale with Cattell's 16 personality factors*

	<i>t</i>		<i>t</i>
A (Affectothymia)	+0.071	L (Suspiciousness)	+0.124
B (Intelligence)	+0.019	M (Non-conformity)	+0.059
C (Ego strength)	-0.165	N (Shrewdness)	+0.148
E (Dominance)	-0.017	O (Guilt-proneness)	+0.056
F (Surgency)	-0.215	Q ₁ (Liberalism)	-0.049
G (Superego strength)	+0.343	Q ₂ (Self-sufficiency)	-0.053
H (Parmia)	-0.101	Q ₃ (Self-sentiment)	+0.106
I (Tendermindedness)	-0.088	Q ₄ (Ergic tension)	+0.111

It will be seen that two of the factors correlate significantly with the scale. The correlation with superego strength is the more substantial and is significant at $P < 0.01$. The negative correlation with surgency is significant at $P < 0.02$. Probably neither of these should be regarded as wholly surprising. Surgency has a happy-go-lucky quality. The sobriety of desurgency is more akin to achievement motivation and it is known that at least one group of high achievers, namely eminent scientists, score highly on desurgency (Cattell, 1965).

The correlation between the achievement scale and superego strength is perhaps even less surprising. Several components of McClelland's concept of achievement motivation have a strong superego flavour to them, especially the central position of the Protestant work ethic, the valuation of achievement as a moral good, the antipathy to gambling, and liking for sombre colours. The findings of the significant correlations between the achievement scale and desurgency and superego strength raises the question of whether the concept of achievement motivation could not be entirely comprehended within Cattell's two factors. Further research would be required to answer this question.

It will be observed that the achievement scale covers several of the central components of McClelland's concept, viz. consciousness of time, dislike of waste, and commitment to work, efficiency and achievement. Some of the other traits which

McClelland has regarded as characteristic of achievement motivation are not included in the questionnaire but do have some loading on the factor. Some of the questions designed to tap these attitudes and included in the factor analysis are shown in Table 5, with their loadings on the factor:

Table 5.

	One mark for	Factor loading
Do you like gambling on football pools, raffles, etc.?	No	+ 0.16
Do you prefer bright reds and yellows to dull blues and greens?	No	- 0.02
Do you tend to be pessimistic and unconfident in difficult situations (e.g. interviews for jobs, etc.)?	No	- 0.06
Do you think success in life is largely a matter of luck?	No	0.09

McClelland has claimed that the person with high achievement motivation dislikes gambling where the odds are very unfavourable, prefers dull blues and greens to bright reds and yellows, tends to be confident that he will be successful in circumstances where his own efforts can determine the outcome, and does not think luck has much to do with success in life. It will be seen from the factor loadings that the colour preference question has a loading in the opposite direction to that demanded by McClelland's theory, but the other three questions do have loadings in the right direction. This result does something to substantiate the factorial unity of McClelland's concept (with the exception of colour preferences) and also increases confidence in the achievement motivation nature of the factor that has been isolated.

As a matter of fact the preference for dull colours is a fairly well-established correlate of introversion (Eysenck, 1947; Lynn & Butler, 1962) and introversion tends to be associated with success. Thus it seems likely that McClelland is right in his view that preference for dull colours is a correlate of achievement, but not in his supposition that it is a correlate of achievement motivation. There are doubtless several other factors independent of achievement motivation which are associated with achievement.

DISCUSSION

It is perhaps reasonable to claim that the scale has made a promising start as a simple questionnaire measure of achievement motivation. Some discussion has been presented of the results as they have been reported, but one point is possibly worth comment. It will be recalled that professors were used as a criterion group of high achievers and it was found that they scored significantly higher than university students. Now McClelland has maintained that the academic life is not particularly attractive to the person with high achievement motivation and has attributed this to the lack of knowledge of results of academic work. He maintains that in entrepreneurship the high achiever assesses the risks involved, makes a judgement, carries the project through, and finally has concrete evidence of whether or not his enterprise has been a success by observing whether he has become a millionaire or a bankrupt.

It is the tangible evidence of success or failure in terms of profit that makes the entrepreneurial life so attractive to the high achiever.

While this view undoubtedly makes an interesting distinction between business and some kinds of professional work, such as that of soldiers in peacetime, judges, teachers and clergymen, the results of whose efforts are admittedly intangible, it does not seem entirely convincing to exclude all professional work on this ground. When the academic carries out a piece of research or writes a book he knows by the results he obtains and the reception of his work whether or not his efforts have been worthwhile. Nor is the time span between effort and eventual knowledge of results particularly different for entrepreneurs and academics. Either may have to wait several years before it becomes clear whether or not their judgements and efforts have paid off. Or, if they prefer, both can go for short-term operations which can be concluded after a few months. Thus it would seem that the entrepreneurial and academic lives have much in common on this score, and there seems no reason why the high achiever should not find the academic life rewarding. This conclusion is consistent with our results showing a high level of achievement motivation among professors.

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