

ORIGIN AND BACKGROUND OF THE SCALE

The title Multi-dimensional Assessment of Personality Series (MAP Series) should orient the alert reader to the fact that he has in the Series something very different from the majority of other test constructions. The MAP Series construction belongs in the realm of structured tests, i.e., tests that are shaped to the structures that basic research has shown to be essential elements of human personality in our culture.

Structured tests are a necessary requirement for functional testing and assessment, i.e., diagnostic testing, where the natural history, the age curves, the degree of inheritance, and the response to therapy of the dimensions measured is understood. With many older tests, e.g., the Rorschach, T.A.T., etc., one depends only on empirical statistical relations between some bit of test behaviour and some diagnostic category, e.g., schizophrenia. With structured tests, by contrast, one gets an evaluation of the dimension understood in a tested theory of personality assessment. For e.g., we know that the dimension of 'Emotional Stability (Ma-Maturity)', is significantly lower in neurotics and psychotics than in normals; that its hereditary determination is relatively unimportant; that it is high in people capable of meeting emergencies, such as air-lines pilots, electricians, and nurses; that it is lowered by chronic conflict and fatigue; that it has some physiological association; and so on.

Alongwith the measures on other dimensions, in a total profile, this means that the psychologist with his theoretical insight, is able to make predictions and take remedial steps that go beyond the mere statistical estimate he is normally able to make between a raw score and some criterion which is valid only for a day. Since these measures have been born out of a slow process, of adequate, programmatic basic research, it is not surprising that the full scientific implication in applied psychology are yet to come. The several basic dimensional patterns are firm enough, as seen from occupational profiles established on these scales. But they stand relatively stark in terms of theoretical embellishment be-

cause psychologists have been all too prone, in the past, to build theories around clinical entities, rather than these real, replicable, and objectively measurable broad personality dimensions. They are real because they emerge from sophisticated multivariate experimental techniques - such as microbes emerged from microscopic and staining techniques in which most physicians were untrained. However, it is not necessary to get immersed in the theoretical origins in order to understand, logically and insightfully, the personality theory now growing from the discovery of personality dimensions.

Discovery of behaviour index values for an increasing number of clinical, industrial, social and educational situations can be left to applied psychology, providing it measures dimensions well and meaningfully. It is the 'meaningful' aspect with which we are here concerned. The MAP Series is the psychologist's answer to these considerations, in the questionnaire realm, to the demand for a test giving fullest information in the shortest time about most personality dimensions/indexes. It is not merely concerned with some narrow concept of neuroticism or "adjustment", or some special kind of ability, but sets out to cover planfully and precisely all the main dimensions along which people can differ.

In applied fields such as clinical, educational, and industrial psychology, the practitioner usually has a feeling that certain behavioural dimensions, e.g., maturity, competitiveness, enthusiasm (according to the nature of the adjustment involved), will be more important and predictive than others. He may be right; but the verdict of many years of research indicates that in nine cases out of ten he will overlook some other, unconsidered personality dimensions that are equally important. The best way to begin is to take cognizance of the total personality, in all its main dimensions. Similarly, in research design, the investigator often begins with an interest in one concept only, e.g., anxiety, extraversion, super-ego strength; yet he would generally be wise, in his first attack in field, to discover what is happening on other personality dimensions at the same time.

The busy psychometrist may sometimes feel that twenty sub-scores is a lot, but if such is the real complexity of human nature, and if, as studies show, the majority of these personality characteristics are involved in most criterion predictions, a much better multiple correlation is to be obtained by respecting the complexity than by indulging in a fool's paradise of over-simplification. To simplify personality assessment is useful in some circumstances, but in most situations it loses some of the possible predictive power and some of the insight into the personality structure.

It is for these prevalent and important conditions that the present MAP series is intended. Its vocabulary is that of the daily newspaper, and, since no writing is required, it can be used as a group or individual test, for a age range of 5 years and above.

There are three special considerations which raise the utility of the MAP Series, for most personnel managers, clinical, educational, and research psychologist.

- 1) Some of the finest statistical research has been devoted to its construction on a very broad sampling of the area of personality responses;
- 2) The statistical treatment resulted in a true personality structure, revealing functionally inter independent items for each dimensions;
- 3) A standardization on a proper variety of occupational groups, teenagers, school students, and young children, to accumulate relations of important criteria.

Regarding the last, the possible statistical predictions from the dimensions, and the psychological grasp of their modes of action, are continually increasing. Organized research is establishing patterns for various clinical diagnostic and prognostic groups, and regression coefficients on criteria of occupational and educational success and adjustment.

Although innumerable questionnaires and inventories have been published in the

last few years, only one or two have been well founded on factor statistical showing that the separate traits or dimensions of personality which they claim to measure are real, functionally unitary, and psychologically significant dimensions. The questionnaires in the present series meet a long-standing demand for a personality - measuring instrument properly validated with respect to the primary personality dimensions that are rooted in general personality research. It is at present unique in: (a) having every item possessed of a demonstrated saturation with respect to each of the dimensions which it sets out to measure, and, (b) having proof that each of the dimension corresponds to a primary personality dimension found elsewhere, i.e., beyond the questionnaire realm, notably in ratings in real-life behaviour situations.

A full description of the psychological meaning of each one of these dimensions is given later. At this point it is suffice to summarize that these are the main dimensions (a) that have been found necessary and adequate to cover all kinds of individual differences of personality found in common speech and psychological literature (they leave out no important aspect of the total personality); (b) that they are independent of one another, so that it is possible for a person to combine any score whatever on one with any score on others (in other words, they do not overlap in meaning, or waste scores by partially repeating the same measure under a new name, as many arbitrary questionnaire scales do, but represent clear functional unities.); (c) that these are known to be important in the sense of each having a wide area of influence on behavior, and in which the influence can be understood in terms of psychological processes of maturation, learning, and interaction with physiological conditions.

It is now appropriate to proceed to explain the way in which the actual test is designed, scored, and administered. After that, you will be better prepared to follow a fuller discussion of the nature of the actual dimensions and the final use of scores in understanding and predicting with respect to a given case.

DESIGN AND PURPOSE OF THE SCALE

Although the questionnaire type of personality test is a mistake to assume that it is a universally valid instrument. Its results differ somewhat as between co-operative and uncooperative, well-educated and poorly educated, honestly and ulteriorly-motivated subjects. Questionnaires have so far been shown to have their most valid application with students or with cooperative, anonymous subjects, under research conditions, and it is recommended that where honesty, in sight, and co-operation are poor, or wherever opportunities exist to test the subject at greater length, objective tests should be used.

However, the majority of questions in the MAP Series are indirect, asking about interests which the subject would not necessarily perceive to be related to the trait in question, so that it escapes some of the distortions described. Moreover, in the MAP Series, we do not interpret the dimensions from the nature of the subject's statements about himself, but from the known correlations between these "mental interiors" as found in questionnaire dimensions and the dimensions established in behaviour. In other words, the question responses are treated as behaviour, not as valid self ratings.

Increasingly, nowadays, we recognize that major directions of adult life are decided in childhood: that "the child is father to the man." This being so, it becomes all the more important to know the child, to study him via meaningful, accurate, and standard measurements. Accordingly, in the MAP Series a special emphasis is placed on development of testing instrument for children which are organically linked to adult tests by psychological continuity of concepts.

Fortunately, it has proved possible to understand adults in terms of essentially the same personality structures as are applied in children's tests. Except for one or two special dimensions, our information on the child form need not be lost or arduously lost recast and re-interpreted as he becomes a man. Such continuity of score meaning over wide age ranges is a unique and valuable feature of the MAP Series, thus, filling a real need in current

research and practice. For one of the most important guides to reliable counselling is having records of earlier exact measurement on the personality dimensions of the child, extending over a number of years.

In development research, measurements on a child at one age must be compared with measurements on the same child some years later. Most previous work of this kind has been hampered by lack of tests which refer to the same dimension reliably at different ages. For example, a score on a verbal intelligence test at one age cannot be accurately compared with a score on another type of culturally-contaminated test at another age.

The design of the MAP Series, which keeps these long-distance goals in view, is meant to cater the psychologists who wants this kind of constancy in their assessments. The MAP Series provides a sequence of scales, which measure the same demonstrated personality dimensions at different ages. The various Forms: Form-A (for Adults), Form-T (for Teenagers), Form-C (for Children), and Form-P (for Primary level), cover essentially the same dimensions from ages 5 and above. Thus, those counsellors and school psychologists, who follow through with structured tests of this type in their routine testing at different age periods will now be able to draw more insightful and systematic conclusions than hitherto about developmental changes in individuals as they progress through the school system, from elementary school through college and adult life. All the Forms are intended for administration in both group and individual situations, for clinical work the latter is preferable. The subjects make their responses on the booklet itself. This booklet can be hand scored with the help of scoring stencils.

Three alternative answers to each item are provided to the subject, in Form A and T, as these are for an older age group. In Form C and P, two category responses are provided as the younger age group is prone to get confused with the middle category response of 'in between', 'uncertain', or 'undecided'.

The Form T of the MAP Series has been planned and based on extensive research on various areas of personality required to be measured by the teachers, counsellors, parents and guidance specialists. Reliable and valid measures of personality of the teenage group are needed for some important reasons such as: (a) it is desirable in schools, to screen out for individual attention and guidance to those students who need help with emotional conflicts and behaviour disorders. By this early detection, many behavioural difficulties can be avoided, (b) as educational opportunities increase it becomes important

to accurately estimate the scholastic future of the student in order to give appropriate occupational counselling, (c) in clinical practice, Form T helps to detect the delinquents and the potential dropouts by investigating the underlying personality dimensions such as adaptability, excitement, maturity and mental health etc.

The MAP Form T includes as many as 20 dimensions of personality which are objectively determined through factor analytic research and are of potential importance in counselling, educational & vocational guidance and clinical practice.

PSYCHOLOGICAL DESCRIPTIONS OF THE DIMENSIONS MEASURED BY MAP FORM-T

A test of normal, teenage/students personality, the MAP FORM T measures 20 dimensions covering Adaptability, Academic Achievement, Boldness, Competition, Creativity, Enthusiasm, Excitability, General Ability, Guilt Proneness, Individualism, Innovation, Leadership, Maturity, Mental Health, Morality, Self-Control, Sensitivity, Self-sufficiency, Social Warmth, and Tension.

Figure-T1 presents a brief summary of the MAP Form T and their high score meanings. In this figure and the following descriptions, the term 'high

score' is generally reserved for sten score range of 8-10, which places the individual in the upper 20% with respect to their reference population. However, this does not suggest that the low scores are of no significance. The dimensions with low score (sten range 1-3) represent important interpretable departures from the norm, placing the individual in the bottom 20th percentile or lower with respect to the reference population. Sten scores of 4-7 represent deviations in the indicated direction from the norm but are less significant features of the profile than the upper and lower sten ranges.

PERSONALITY

Adaptability (Ad) - This dimension refers to the ability to make appropriate responses to changed or changing circumstances. Those teenagers who score high on **Ad** readily accept any beneficial change to meet the environmental demands are said to be highly adaptable. They settle down to the conditions for work or learning with the elimination of unnecessary preparatory behaviour.

The **Ad** dimension is a collection of various other personality dimensions consisting of emotional maturity, uninhibited behaviour, trustworthiness, self-assurance, strong will power, social preciseness and following self image. Students scoring low on **Ad** do not have a harmonious relationship in

DIMENSIONS

their environment and are unable to obtain satisfaction for most of their needs. They usually fail to meet the demands of their physical and social surroundings.

Academic Achievement (Am) - This is a sentimental dimension consisting mainly of two attitudes: "learning skills" and "inclination to climb". It seems to reflect the amount of actual skill the student has had and the degree to which he is currently interested and concerned. Dimension **Am** is a collection of various other personality dimensions referred to as general intelligence, dominance, imagination, radicalism, self-sufficiency and discipline. High scores on dimension **Am** may be described

Figure T1: High Score Description of MAP Form-T Dimensions

Dimensions	Symbols	High Score Description
1. Adaptability	Ad	Accommodating, accepts and adjusts to situations easily.
2. Academic Achievement	Am	Ambitious, overtly interested in position and realistic involvement in school life.
3. Boldness	Bo	Socially bold, adventurous, responsible and friendly.
4. Competition	Co	Independent minded, stern and assertive.
5. Creativity	Cr	Original, fluency in thoughts and explorative.
6. Enthusiasm	En	Cheerful, talkative, expressive and frank.
7. Excitability	Ex	Impatient, demanding and hyperactive in behaviour and thoughts.
8. General Ability	Ga	Intelligent, high abstract thinking, sensitive to minute details.
9. Guilt Proneness	Gp	Escapist, shirking responsibility, insecured and depressed
10. Individualism	Id	Loner, likes to be internally restrained, avoids group action.
11. Innovation	In	Experimental thinking, liberal ideas, can analyze concepts swiftly.
12. Leadership	Ld	Controls, directs and initiates actions for a group, power to influence others, achieves goals.
13. Maturity	Ma	Realistic about life and emotionally stable.
14. Mental Health	Mh	Zestful, well adjusted, positively harmonious state of mind.
15. Morality	Mo	High sense of duty, attentive to people, emotionally disciplined and responsible.
16. Self Control	Sc	High self-image, socially conscious, strong will power.
17. Sensitivity	Se	Over protected, dependent, impatient, and attention seeking.
18. Self Sufficiency	Ss	Independent, manipulating, and enterprising.
19. Social Warmth	Sw	Outgoing, participative, good natured and warm hearted.
20. Tension	Tn	Excited, tense, irritable and frustrated.

as ambitious, overtly interested in their position and realistically involved in various aspects of their school life. Low scores on dimension **Am** indicate regressive behaviour, escapism and unwillingness to accept responsibility. Feelings of failure may also tend to decrease this score.

Boldness (Bo) - High scoring individuals on dimension **Bo** are typically adventurous, bold and energetic with good insight. They enjoy being the focus of attention in a group situation and face no problems with stage-fright. High scorers on dimension **Bo** are reported to feel that enjoying is more important than winning the game. They also describe themselves as quick decision makers, but it should be pointed out that they do not necessarily make the correct decision. In group situations high **Bo** persons feel free to participate and make more merrily 'social' than task oriented remarks.

The low scorers on the other hand reports to be intensely shy, slow, and impeded in expressing himself. They will dislike occupations with personal contacts, and prefers one or to close friends to crowds. They avoid large parties or open competition and are easily resentful, but very considerate of others sensitivities.

Clinically speaking, high **Bo** individuals, are like well-insulated building, who can withstand external pressures passively without expending much energy in doing so. Low **Bo** individuals, on the other hand have little 'insulation', therefore, external stresses can penetrate them more easily. Consequently, they expend more energy to maintain equilibrium.

Competition (Co) - High scores on **Co** indicates that the teenager is self-assertive, dominant and aggressive. Such teenagers describe themselves as forceful and are generally very direct in their relations with other people. They like to put their own ideas into practice and enjoy having things their own way. Such high competition may lead to a dominant personality describing the teenager as disobedient, head strong self-will, independent and sometimes anti-social. But the moderate scores on this dimension (sten 6-8) are often controlled and are

seen in sublimated form that can be treated highly desirable, for example, good sports performance; independence and creativity in arts and sciences are associated with **Co**.

Regarding clinical implications, extremely high **Co** (sten 9 or 10) are sometimes associated with aggression and stubbornness that frequently masks covert feelings of inferiority. Low **Co** individuals tend to be submissive, mild, humble and accommodating. Dimension **Co** is also related to leadership behaviour. High **Co** students display more effective role interaction in a group and try to influence others. They feel free to participate and readily raise group problems.

Thus, both the extremes on this dimension pose problems for adjustment. High score (sten 9-10) definitely becomes part of the delinquency - behaviour problem in teenagers. On the other hand, low score (sten 1-2) may also be pathological for it occurs in abnormally submissive and humble teenagers.

Creativity (Cr) - High scorers on **Cr** are reserved, and critical thinkers. They tend to be independent, undemonstrative, and high on scholastic and mental abilities. High scorers on **Cr** are also sensitive to scientific reasoning and experimental thinking. Since **Cr** is a combination of various other personality dimensions, it is also found that high scorers are self-assured, self-sufficient and self-sentimental about their image. Low scorers, on the other hand, are dull, emotionally less stable, impatient and threat sensitive, but they are more warm hearted and cheerful types.

Enthusiasm (En) - High scoring teenagers on dimension **En** are generally happy-go-lucky, lively and enthusiastic. In their self reports they admit to having more friends than most people. They enjoy parties, shows and will prefer jobs that will offer change, variety and travel.

The low score on this dimension need not be confused with depression. Low **En** simply indicates that the person is serious, prudent and sober. This dimension may be treated as a behavioural control indicator in which high score indicates that the individual will externalize or 'act out' inner conflicts. On the other

hand low **En** simply indicates that the person will internalize (or control) his inner conflicts.

En also has some relation to the family position of the child. The oldest child due to more responsibility and adult contact, tends to be low scorer and the youngest, high scorer on **En**. Apart from the family position effect, enthusiasm declines after adolescence, therefore, the teenager becomes less talkative and cheerful. Such behaviour may also be considered as adjustment to a "family load".

Low **En** scorers are not outstandingly popular with their peer groups, and do not usually succeed in elected leadership or personal contact work. But their seriousness about any task is likely to promote their occupational steadiness and adjustment after school life.

Excitability (Ex) - Since dimension **Ex** is a combination of immediate temperamental quality, mind-wondering distractibility, insecurity and irrepressible impulsiveness, at first sight, high scores on this dimension may be thought of as an abnormal teenager. High **Ex** individual reports that he is a restless sleeper, easily distracted from work by noise or intrinsic difficulty, is hurt and angry if not given important positions, or whenever he is restricted or penalized for incorrect behaviour. Low scorers on the other hand, are complacent, not easily jealous and unemotional in nature.

General Ability (Ga) - High scoring individuals on **Ga** have a greater mental capacity to learn. They are insightful, fast-learning, and intellectually adaptable. They are also inclined to have more intellectual interests and show better judgements in their observations. Low scoring individuals on **Ga**, on the other hand, have a poor mental capacity to learn and are unable to handle abstract problems. They tend to be less well organized and show poor judgement in their observations.

There may be some clinical significance to low scores on dimension **Ga**, particularly for individuals who, on the basis of other available evidence, could be expected to perform reasonably well. Since the items themselves are not ex-

traordinarily difficult, an otherwise capable individual who answers too many of them incorrectly may not be paying sufficient attention to the test.

Guilt-proneness (Gp) - The high **Gp** person feels overfatigued by exciting situations, is unable to sleep through worrying, feels inadequate to meet the rough daily demands of life, is easily down-hearted and remorseful, feels that people are not as moral as they should be, is inclined to piety, prefers books and quiet interests to people and noise, and shows a mixture of hypochondriacal and neurasthenic symptoms, with phobias and anxieties most prominent.

In group dynamics high **Gp** persons do not feel accepted or free to participate, are considered shy, ineffective speakers, and hinderers, but remain religiously task-oriented in their remarks. They select few peers as friends, and have high standards of group conformity to rules. High **Gp** dimension is strongly weighted against successful leadership in face to face situations and is correlated significantly with accident proneness.

Clinically, dimension **Gp** is very important, first as one of the largest contributor in anxiety, appearing centrally in the depressive-anxiety syndrome, and secondly, as tending to be generally high in neurotics and many psychotics. It is very low in delinquents and mostly distinguishes those who "act out" their maladjustment from those who suffer it as internal conflict. Consequently, it is not to be confused with simple super ego strength or a 'psychological weakness', as it represents a "guilt proneness" and "poorness in spirit" sometimes associated with piousness.

Individualism (Id) - The high **Id** individual prefers to do things on his own, is physically and intellectually obstructive, thinks over his mistakes repeatedly and how to avoid them. He tends not to forget if he is treated unfairly, and generally has private views from the group, but prefers to remain in the background to avoid arguments. High scores on this dimension appears to be the common influence underlying neurotic behaviour.

Low scorers on dimension **Id**, on the other hand, are zestful and highly involved in group action. They may not come out as group leaders but like to sink themselves in group activities. They are vigorous and ready to accept common standards.

Innovation (In) - Teenagers with high score on this dimension tend most frequently to be analytical, liberal and innovative. High **In** teenagers are more well-informed, more inclined to experiment with problem solutions, less inclined to moralize, etc. They feel that society should throw out traditions, they trust logic rather than feelings, favour relaxed laws, and prefer to break with established ways of doing things.

Occupationally, high scorers will opt for jobs of executives and directors, progressive politicians, and especially, scientific researchers. Professions like priests, nurses, many semiskilled and unskilled worker groups, are not meant for such individuals. Neurotics tend to run low on dimension **In**. In group dynamics the high **In** person contributes significantly more remarks to discussion, a high percentage being of a critical nature.

Leadership (Ld) - A person who scores high on dimension **Ld** has the ability to direct and control the attitude or actions of others. This is specially true when this person exhibits such influence on a group. High **Ld** teenagers usually occupy such positions in a group that commands a certain authority or potential for controlling the behaviour of this group. High leadership qualities consists of various other personality characteristics such as self-confidence, controlled and strong will power. They are also adventurous and responsive to people, persevering, determined and responsible, and are usually quick and alert in their surroundings.

Subjectively, the high **Ld** person views himself as a guardian of manners and morals. They are planful and are able to concentrate, interested in analyzing people and prefer efficient friends to other companions. Low scoring individuals on dimension **Ld** are undependable, obstructive and prefer to be sound followers. They are group dependent and impatient and are likely to escape when faced with

responsibility.

Maturity (Ma) - This dimension is the first of those involved in the anxiety pattern. Its contribution is negative, i.e., higher anxiety is generally reflected in low scores on **Ma**. This dimension is one of dynamic integration and maturity as opposed to general emotionality. In its positive sense it seems to be what the psycho-analysts are attempting to describe by the notion of ego strength. The individuals level on **Ma** dimension may be taken as an index of his stress tolerance. The higher the **Ma** dimension score, the more resources the individual has available to meet the challenges of the day. The low **Ma** teenager is easily annoyed by things and people, is dissatisfied with the world situation, his family, the restrictions of life, and his own health. He shows generalized neurotic responses in the form of phobias, psychosomatic disturbances, sleep disturbances, hysterical and obsessional behaviour.

High **Ma** teenagers are frequently chosen as leaders than are low **Ma** teenagers. It should be noted that delinquents may also score high on dimension **Ma** ("ego strength") which agrees with their psychoanalytic contrast to neurotics. Clinically, the outstanding observation is that most disorders show low **Ma** scores, though neurotics and psychotics do not differ only in having low **Ma**, but in other dimensions also.

Mental Health (Mh) - High scoring individuals on dimension **Mh** are in a relatively enduring state in which they are well adjusted, have a zest for living, and are attaining self-actualization or self-realization. This is a positive state, and not mere absence of mental disorder. It includes all measures aimed at preventing mental disorder and at improving the psychological adjustment of teenagers and their capacity for harmonious relationship in groups. The **Mh** dimension consists of various other personality characteristics such as emotional stability, impulsivity, self-security and low tension.

At the level of self-report, high **Mh** teenagers report that they are generally able to reach personal goals without much difficulty. They do not seem to be easily

distracted when working on something and have general satisfaction with the way they have lived their lives.

Morality (Mo) - Teenagers who score high on this dimension tend to be more persistent, more respectful of authority, and more conforming to the standards of the group. The hypothesis may be set up that this dimension corresponds to the super-ego as in psychoanalysis. On the whole, it would seem that this dimension best depicts the regard for moral standards, the tendency to drive the ego and to restrain the id, which are most frequently regarded as marks of the super-ego.

In their self-reports, high **Mo** teenagers describe themselves as being disgusted by sloppy friends and messy rooms. They generally follow rules to the letter. Low scores on dimension **Mo** occasionally signals sociopathic tendencies. Extremely high scores on dimension **Mo** are also associated with rigidity and unrealistic high standards for themselves, and as a result experience guilt and feeling of inadequacy when they fail to meet their standards. Thus, flexibility is not a part of the high scoring teenagers behaviour and this may lower the teenagers ability to cope with extreme stress.

High scores on dimension **Mo**, in typical high school groups, consistently correlate positively with academic achievement, interest in school and peers, popularity, and election to leadership. On the other hand, low score on **Mo** dimension is found among institutionalized delinquents, associated with behaviours such as showing-off, stealing, lying, destruction of property and temper tantrums. Therefore, the scores on **Mo** play an important role for evaluating character education.

Self-Control (Sc) - This dimension may be treated as the ability to bind anxiety. High scoring teenagers generally have strong control over emotional life and behaviour in general. The high **Sc** teenager shows socially approved character responses, behaviour control, persistence, foresight, considerateness of others, and conscientiousness.

In group dynamics high **Sc** scorers especially picks out persons who will

be chosen as leaders, but even more so those who are effective rather than merely popular leaders. They make more remarks than others, especially problem-raising and solution-offering, receive fewer votes as hinderers, and fewer rejections at the end of the sessions. High score on dimension **Sc** is associated with success in mechanical, mathematical, and productive organizational activities. High score on dimension **Sc** is also associated with all kinds of occupational and scholastic success. It has a role in many situations of control which produces steadiness and purpose in personality. Consistent with this, a low score on dimension **Sc** is associated with teenage delinquency.

Clinically, low score on **Sc** dimension is a major contributor to the anxiety pattern and serves as an important clinical sign, signalling the teenagers' inability to keep his/her emotions in order. But at the same time, if the score on dimension **Sc** is extremely high (sten 9-10) in combination with elevations on dimension **Gp** (guilt proneness) and **Tn** (tension - to be discussed later), there is a tendency to excess compulsivity, resulting in obsessional types of behaviour.

Sensitivity (Se) - Descriptions associated with high scores on this dimension include tender minded, dependent, overprotected, fidgety, clinging, and insecurity among teenagers. High **Se** scorers prefer to use reason rather than force in getting things done. The high **Se** teenager shows a fastidious dislike of "crude" friends and rough tasks, a liking for travel and new experiences, a labile (indeed, unstable), imaginative aesthetic mind, a love of dramatics, and a certain impracticality in general affairs. There are indications that teenagers with interest in art score high on this dimension. Group performances tend to be poorer with high score on dimension **Se**, while they receive significantly more descriptions as fussy, slowing-up group performance in arriving at decisions, and making social-emotional negative (morale upsetting) remarks. Low scores on dimension **Se** on the other hand, represents some sort of tough, masculine, practical, mature, group-solidarity-generating, and realistic ("no-nonsense") temperamental dimension.

The central feature of high **Se** is the emotional-indulgent, over-protective home. Though it has cultural associations, it could not be correct to identify it with "higher" culture or refined ideas for high **Se** may occur in homes of low cultural status where discipline is neglected, and indulgence is encouraged by the parents. High **Se** scorers also report that they avoid rough and adventurous situations, like to depend on the teacher, are artistic and neat, but not organized. The teenagers who score very high (sten 9-10) on this dimension should probably be encouraged to develop responsibility, to cling less to teachers or parents, and indulge more in the activities of his own age group.

Self-sufficiency (Ss) - High scoring individuals on this dimension prefer to be alone. They do not need the support of groups. In describing themselves, they prefer to work alone rather than with committees and are good at problem solving themselves. High scorers also appear to be related to success at school, particularly at the upper educational levels.

In group dynamics, the high **Ss** teenager is more dissatisfied with group integration as his ideas tend to be rejected. Even at school they are generally on the seclusive side. They also seem to have older friends, mature interests and their general achievement is higher. Thus, the high **Ss** students is a confident and resourceful person with some apparent disdain of group activities. This is often mistaken for shyness or introverted behaviour. The low scorers may be described as a person who is group dependent, who strongly values social approval and is fashionable.

Clinically speaking, extremely high scores on **Ss** are probably not directly indicative of any underlying pathology, but in combination with low Social Warmth (to be discussed later) and Enthusiasm (**En**) or high Guilt Proneness (**Gp**) and Tension (**Tn**), may lead to pathological withdrawal from the society. High scorers may also be associated with the incidence of coronary heart disease and hypertension later in life.

Social Warmth (Sw) - High **Sw** scorers are usually found to be very warm

hearted, personable, and easy to get along with. Their self-reports indicate that they like to give presents to others, even without any occasion. If given a choice, they would rather sell than develop an invention. The high **Sw** student expresses marked preference for occupation dealing with people, enjoys social recognition, and is more tolerant of "difficult" people. High **Sw** individuals prefers to adapt to other's schedule rather than require others to adapt to their schedules. They are also more likely to share their feelings with others.

The low **Sw** person is quite uncompromising, prefers things to people, likes to work alone, looks for thinking quality in companionship and is introspective. The low scorers are also more penetrating in their evaluations of people and things. They depend more on long term undertakings and those requiring exactness in work, for example, an electrician's job. They are more dependable in exactly meeting promises and obligations.

Clinically, extremely low scores (sten 1 or 2) may indicate unsatisfied interpersonal relationships. In combination with other dimensions such as low Enthusiasm (**En**), and Boldness (**Bo**) or high Self-sufficiency (**Ss**) may point to a pathological dislike and avoidance of others. On the other hand, extremely high scores (sten 9 or 10) may suggest an unhealthy and overriding need for approval by others.

Tension (Tn) - High **Tn** scorers are irritated by small things, are short tempered and may suffer from sleep disturbances. Extreme cases (sten 9-10) involves being irrationally worried, tense, irritable, anxious, and in turmoil. In group situations high scorers rarely achieve leadership and have a poor concept of group unity and orderliness. It is seen that high score on **Tn** is an important indicator which signals an unmistakable S-O-S on the part of the individual.

On the clinical front, high **Tn** alongwith high Guilt-proneness (**Gp**) is a clear indicator of general anxiety and differentiates normals from neurotic. It also contributes significantly to accident proneness.

ADMINISTRATION

The present scale is printed on a eight page booklet. The front page contains the instructions for answering questions with few examples. Pages 2 and 8 (inside pages) contain the actual test items to be answered by the subject. Since this scale is a power test (i.e. there is no time limit), the average subject takes approximately 25-30 minutes to complete the test in full. It can be given both individually or in group situations.

The MAP Form T has been designed for self-administration with little supervision required. The examiner should not indicate to the subject that the scale is a "personality" scale, nor that the MAP Form T printed on the booklet stands for 'Multi-dimensional Assessment of Personality'. If at all any statement must be made about the nature of the scale, it should be referred to as attitude or interest scale.

If the subjects can read a newspaper, they can understand the instructions on the first page and work out the practice problems themselves. No further instructions are required, because if they understand these questions and answer them by checking one of the three possible answers, they will be able to answer the actual questions themselves.

It is necessary to distinguish between the clinical use of the test, usually individual, and the educational use, typically group. In group testing or individual testing the normal subjects are simply asked to read the front page and to fill in name etc. on the top of the test booklet and wait until they receive further instructions. When everybody has read "Please turn over the page. Are there any questions about marking the answers or about anything else?"

He deals with questions, if any, and may then, according to discretion and the nature of the group of subjects, briefly re-emphasize certain points in the instructions. For example, with a group of prospective students in an admission test, he may say: "It is to your own interest to answer as correctly and truthfully as you can." Or, "Remember not to use the 'Not sure', 'Uncertain', or 'Undecided' type of choices more than it is absolutely necessary. In general, it is good to remind everyone preferably five minutes after starting; "Be sure not to miss a question. You can erase and make corrections if you wish, but make your final pencil marks quite clear."

It helps most subjects to know the rate at which they should be working. There tends to be a skewed distribution in the time people take to do the test, such that the last few, in a group of a hundred, will take three or four times as long as the average, unless reminded. Thus, after 20 minutes most subjects will be at about the half way mark, or beyond. We recommend calling out at three points; after 10 minutes, say, "You should now be at item 40 or beyond. Answer more quickly if you have not reached 40". After 20 minutes say, "You should be now at about item 90. Remember to give the first answer that comes to you. If you have not reached 90 you are deciding too slowly." After 30 minutes say, "you should be now about to finish the test. Please hand in your test booklet here as soon as you finish." Add, when most people are about to finish: "Glance over your test booklet to make sure you have not missed any question, and that your name etc., are on the top of the test booklet." There is, of course, no absolute time limit; but after 30 minutes stragglers should be encouraged to finish as soon as possible.

this category very frequently, and keep it as a last resort when both (A) and (B) are not suitable. All of the items were carefully screened, and several criteria were considered in the final item selection.

The standardization of MAP Form T is based on more than 2000 protocols tested at more than 10 locations throughout the country. Various research schol-

ars, assistants, school counsellors and psychologists participated in this standardization. The sample included boys and girls of 12-18 years of age from various educational institutions. Table-T1 provides a demographic profile of these groups. The primary sampling considerations were geographical locations (mainly towns and cities), and parental occupations (to reflect socio-economic status), and age.

NORMS

In many research applications, the examiner will have no need to convert the raw scores obtained from the test to sten scores. However, commonly the test users would like to know where an individual stands in relation to a defined population. For this purpose the raw scores are converted into sten scores. The term '**sten**' comes from "**standard ten**". The sten score is distributed over ten equal intervals of standard score points, from 1 to 10. The use of sten scores has been found to be very satisfactory, especially, with people inexperienced in statistical techniques involved in psychological testing.

Once the test administrator has decided which table will be most appropriate, the use of norm table is quite straightforward. For example, to convert raw score of dimension **B_o**, find the raw score of dimension **B_o** in the row **B_o** and read the corresponding sten score on the top or bottom column of 'Sten' scores. Do likewise for other dimensions. Please note that the values within the table (i.e., in the body of the table) are "raw scores" - the values obtained from the scoring key; and the values on the top and bottom columns are corresponding "sten scores". The sten scores are plotted on

the MAP Form T profile sheet, which is provided separately.

Since, significant differences were found between males and females on some of the dimensions, the norms for each group were prepared separately. The norm tables given here are therefore separate for both males and females. The basic set of norms consists of Normal Adults and College Students.

To use norm tables the test user must note that the sten scores derived from these tables are *n-stens* or *normalised stens*, i.e., they do not result from a linear transformation of the raw score distribution, but instead, from an area transformation of the raw scores designed to produce a more normal distribution. For test users who wish to convert a group mean raw-score profile to sten (*standard-deviation stens*), the means and standard deviations of the norm group are given at the bottom of the tables.

The sten of 4-7 indicates average score, sten 8-10 indicates high and extremely high score and sten of 1-3 indicates low and extremely low scores.

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Table-T3: Norms for Teenage Boys

Dimension	Sten Scores										Mean	SD
	1	2	3	4	5	6	7	8	9	10		
Ad	0-2	3	4-5	6	7	8	9-10	11	12	13-14	Ad	7.60 2.56
Am	0-2	3	4	5	6-7	8	9	10	11	12-14	Am	7.01 2.31
Bo	0-2	3	4-5	6	7	8	9-10	11	12	13-14	Bo	7.53 2.48
Co	0-2	3	4	5	6	7	8	9-10	11	12-14	Co	6.72 2.21
Cr	0-3	4-5	6	7	8	9	10	11-12	13	14	Cr	8.58 2.33
Dimension	1	2	3	4	5	6	7	8	9	10	Mean	SD
En	0-2	3	4	5	6	7-8	9	10	11	12-14	En	6.95 2.29
Ex	0-2	3	4	5	6	7-8	9	10	11	12-14	Ex	6.90 2.27
Ga	0-3	4-5	6	7	8	9	10-11	12	13	14	Ga	8.73 2.31
Gp	0-1	2	3	4-5	6	7	8	9	10	11-14	Gp	6.19 2.35
Id	0-2	3	4	5	6	7	8	9-10	11	12-14	Id	6.74 2.22
Dimension	1	2	3	4	5	6	7	8	9	10	Mean	SD
In	0-3	4	5-6	7	8	9	10	11	12	13-14	In	8.38 2.26
Ld	0-2	3	4-5	6	7	8	9-10	11	12	13-14	Ld	7.61 2.51
Ma	0-2	3	4	5-6	7	8	9	10-11	12	13-14	Ma	7.41 2.44
Mh	0-2	3-4	5	6	7	8	9	10-11	12	13-14	Mh	7.62 2.34
Mo	0-2	3-4	5	6	7-8	9	10	11-12	13	14	Mo	8.23 2.71
Dimension	1	2	3	4	5	6	7	8	9	10	Mean	SD
Sc	0-2	3	4-5	6	7	8	9-10	11	12	13-14	Sc	7.58 2.50
Se	0-1	2	3	4	5	6	7	8	9	10-14	Se	5.43 1.79
Ss	0-1	2	3	4	5	6	7	8	9	10-14	Ss	5.77 1.90
Sw	0-2	3	4-5	6	7	8-9	10	11	12	13-14	Sw	7.84 2.58
Tn	0-2	3	4	5	6-7	8	9	10	11	12-14	Tn	7.06 2.33
Vi	0-2	3	4	5	6	7	8	9	10	11-14	Vi	6.60 2.17
Dimension	1	2	3	4	5	6	7	8	9	10	Mean	SD
Sten Scores												

Age Range: 12-18 years,

N = 1150

Table-T3: Norms for Teenage Girls

Age Range: 12-18 years

N = 950

Table-T4: Norms for Teenage Boys & Girls (Combined)

Dimension	1	2	3	4	Sten Scores					Mean	SD	
					5	6	7	8	9			
Ad	0-2	3	4	5	6-7	8	9	10	11	12-14	Ad	7.14 2.35
Am	0-2	3	4	5	6	7	8-9	10	11	12-14	Am	6.81 2.24
Bo	0-2	3	4	5-6	7	8	9	10-11	12	13-14	Bo	7.40 2.44
Co	0-2	3	4	5	6	7	8	9	10	11-14	Co	6.06 2.01
Cr	0-2	3-4	5	6	7-8	9	10	11-12	13	14	Cr	8.23 2.71
Dimension	1	2	3	4	5	6	7	8	9	10	Mean	SD
En	0-2	3	4	5	6	7	8-9	10	11	12-14	En	6.84 2.25
Ex	0-2	3	4	5	6-7	8	9	10	11	12-14	Ex	7.06 2.32
Ga	0-4	5	6	7	8	9-10	11	12	13	14	Ga	8.88 2.93
Gp	0-2	3	4	5	6	7	8-9	10	11	12-14	Gp	6.80 2.24
Id	0-2	3	4	5	6	7	8	9	10	11-14	Id	6.59 2.17
Dimension	1	2	3	4	5	6	7	8	9	10	Mean	SD
In	0-2	3-4	5	6	7-8	9	10-11	12	13	14	In	8.31 2.74
Ld	0-2	3	4-5	6	7	8	9-10	11	12	13-14	Ld	7.64 2.52
Ma	0-2	3	4	5	6-7	8	9	10	11	12-14	Ma	7.08 2.33
Mh	0-2	3	4-5	6	7	8-9	10	11	12	13-14	Mh	7.81 2.57
Mo	0-3	4-5	6	7	8	9	10-11	12	13	14	Mo	8.68 2.86
Dimension	1	2	3	4	5	6	7	8	9	10	Mean	SD
Sc	0-2	3	4-5	6	7	8	9-10	11	12	13-14	Sc	7.52 2.49
Se	0-2	3	4	5	6-7	8	9	10	11	12-14	Se	7.06 2.33
Ss	0-1	2	3	4	5	6	7-8	9	10	11-14	Ss	5.23 1.72
Sw	0-3	4-5	6	7	8	9	10	11-12	13	14	Sw	8.57 2.82
Tn	0-2	3	4	5-6	7	8	9	10	11	12-14	Tn	7.22 2.38
Vi	0-2	3	4	5	6	7	8	9	10	11-14	Vi	6.60 2.17
Dimension	1	2	3	4	5	6	7	8	9	10	Mean	SD
Sten Scores												

Age Range: 12-18 years,

N = 2100

RELIABILITY

The reliability or internal consistency is important to study, i.e., the agreement of dimension scores with itself under some change of conditions. Therefore, the reliabilities of the MAP Form T were calculated as split-half reliability and test-retest reliability coefficients with one week interval. The results obtained are shown in the table given here.

For calculating the split-half reliability, a trial run of the present scale was conducted. The reliability were computed for over 800 teenagers using Spearman-

Brown formula. The scale was divided into two parts using odd-even method and care was taken to ensure that each half contained more or less the same number of questions.

The test-retest reliability was also calculated for the present scale by calculating the correlation of coefficient between two sets of scores of the same individual on the same scale, with one weeks time interval. The sample size for test-retest reliability was approximately 600 subjects.

Table-T6: Test-retest & Split-half Reliability Coefficients

Dimension	Test-retest (one week interval)	Dimension	Split-half
Ad	.66	Ad	.71
Am	.68	Am	.66
Bo	.73	Bo	.75
Co	.69	Co	.72
Cr	.65	Cr	.64
En	.72	En	.72
Ex	.69	Ex	.64
Ga	.63	Ga	.67
Gp	.68	Gp	.66
Id	.65	Id	.67
In	.71	In	.73
Ld	.70	Ld	.72
Ma	.64	Ma	.71
Mh	.72	Mh	.74
Mo	.74	Mo	.72
Sc	.66	Sc	.68
Se	.74	Se	.76
Ss	.69	Ss	.70
Sw	.76	Sw	.73
Tn	.73	Tn	.74

VALIDITY

The basic definition of validity is that it is an index of how well a scale measures what it purports to measure. In the case of an ability test or an achievement test, this can be done directly and more easily. But this may not be possible with a test of personality.

Now, the question here is, what was MAP Series designed to measure? As mentioned earlier the MAP Form T was conceived primarily as a device to measure 20 independent personality dimensions that resulted from a set of items administered on normal adolescents. The items in this final form are the survivors from several thousands of items originally tried, and constitute only those which continue to have significant validity against the dimensions. The factor analyses verified the existence and structure of these 20 independent personality dimensions. More formally, to understand the concept of validity used here we must know the background theory of factorial validity.

Factorial validity is a technique which uses factor analyses in order to show the independence of each dimension. Most tests of mental ability and personality, sample a composite behaviour or ability such as verbal knowledge, numerical and quantitative reasoning, memory span, and concept formation. These and other abilities, specially when represented by a single composite index (such as mental age or IQ), are not functional unities.

Further, they are not measures of a "pure" ability, i.e., one type of ability uncomplicated by others. Thus, a test is said to have high factorial validity if it is a measure of one functional unity (for example, word knowledge), to the exclusion of other elements as far as possible. The ultimate goal is to devise tests, which will measure only one functional unity, relatively independent of others, i.e., low inter-correlations. Such pure tests can then be used as subtests in a comprehensive measuring instrument.

In the MAP Series, these functional unities are identified by analyzing the inter-correlations among a number of separate, relatively restricted measures, which identify the common factors for obtained coefficients. Factor analysis, therefore, is intended to reduce the number of variables, or test categories, needed to represent an individual's traits for specified purposes. Factorial validity here, is therefore, determined by the weights (called, "loadings") contributed to the total-test scores by each of derived scores. It is also determined by the relative independence of one another (low intercorrelations). Thus, to be true to its design, each dimension should have one "important" loading - on the dimension that it was intended to measure - and 19 "unimportant" loadings. These factorial validity coefficients are shown in Table-T7 below.

Table-T7: Factorial Validity Coefficients of MAP Form T

Dimension	Validity Coefficients	Dimension	Validity Coefficients
Ad	.81	In	.82
Am	.77	Ld	.81
Bo	.81	Ma	.81
Cr	.82	Mh	.79
Co	.85	Mo	.82
En	.78	Sc	.81
Ex	.81	Se	.80
Ga	.77	Ss	.82
Gp	.81	Sw	.83
Id	.79	Tn	.81

Perhaps the best interpretation of these values is that they represent an upper limit of predictive potential of any single dimension. For example, dimension **Ad** by itself is unlikely to

correlate higher than .81 with any external or "real" criterion. The reason behind this is that the pure factor underlying each dimension is the most important systematic source of influence on that particular dimension.