

THE SENTENCE COMPLETION TEST: AN EXPERIMENT AND EVALUATION

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THE Sentence Completion Test is now a well-established technique. It is more than sixty years since Ebbinghaus (2) published the first completion test, which he used to assess mental abilities of schoolchildren in Breslau. But it was not until 1928 that the completion method was used for "personality" assessment, when a fifty-item test was used by Payne (11) as part of a guidance programme.

The method caught on slowly, and most of the experimentation was done in America. Levy (6) listed a hundred and thirty-five studies between 1946 and 1951, and in 1953 Bonnet (1) published an excellent review of the literature up to that time.

Although a few standard versions of the test have appeared, e.g. those of Rohde (13), Rotter (14), Holsopple and Miale (5), and Sacks (16) most experimenters have used versions of their own. One of the great advantages of the test is its flexibility: tests can be made up to suit the purpose of the experimenter.

It is not my intention to review the literature since 1953, but as the test has not been greatly used in this country, it may be worth while to mention some of the modifications introduced and some of the experiments carried out, including a recent one by the writer.

One modification, in the writer's opinion an unsatisfactory one, was to offer the subject a choice of completions—the "Forced choice" technique—which strikes at the root of the completion method. The essential feature of this method is the eliciting of "free" associations.

In the design of sentence-openings three main approaches have been used, either separately or in combination—the first person approach—"I am most at ease when . . .", the third person approach—"John felt at ease when . . .", and the impersonal approach—"People feel most at ease when . . .". There have been differences of opinion about these.

Rohde (12) thought that the first person method put the subject on his guard and limited his freedom of expression, while the third person method relaxed his control and allowed him to project his needs, wishes, likes, dislikes and fears, etc., more readily—material which he would be unable or unwilling to bring out in the direct approach.

Stein (17) agreed with this, and his own third person approach yielded higher indices of maladjustment than the first person approach.

Sacks (15) on the other hand found that the first person items produced results more closely related to the criterion (psychiatric ratings); and 67 per cent. of his subjects chose the direct form as being a truer representation of their state of mind. In the third person items some subjects related their responses to actual people known to them. Because of this Sacks preferred the impersonal approach (above).

Getzells and Walsh (3) gave paired completion tests, i.e. "direct" (first person) and "projective" (third person) to their subjects. The former was said to provide a measure of overt attitudes and the latter of covert attitudes. A further metric was the Index of Differentiation, a measure of the discrepancy between the two: in a sense a measure of degree of repression.

For clinical use the writer favours the first person "stems". In disturbed subjects the emotionally charged material is near the surface waiting to be released. This method is very useful for subjects who are too shy to speak in the interview, or forget most of the things they wanted to say. In these cases the protocols may be made the basis of further interviews.

Scoring: There has been some controversy over the scoring of the sentence completion test. Holsopple and Miale (5) say "The procedure in dealing with sentence completions is a procedure of interpretation and is not a procedure of scoring . . ." the objectivity of many psychological instruments "has long been clearly, if quietly, recognized as illusory".

Rohde (13) says one cannot score a sentence completion record on the basis of instructions in a manual. Her own method based on Murray's schema (8, 9) of needs, "press" etc., is a very complicated one, which would require a good deal of training. Sacks (16) used a three-point scale for degrees of maladjustment—2 points for "Severely disturbed", 1 point for "Mildly disturbed", and nil score for "Not significantly disturbed".

Rotter (14) uses a seven-point scale covering degrees of adjustment and maladjustment. He gives criterion sentences to guide the scorer and there is a correction for omissions. Although such a scale gives a wide score-distribution it is less easy to score than a five- or three-point scale, and gives lower inter-scorer reliability.

Experiments, including the one to be described, show that semi-objective scoring of sentence completions is possible and useful for comparing both groups and individuals.

The score is only a part, perhaps the least important part, of the information accruing from the test; but the more important question of interpretation will be considered later.

Reliability: The "Split-half" or "Odd-even" methods of testing internal consistency are not relevant because of the great variety of themes covered. If, however, items are collected into categories such methods may be applied.

The test-retest method is also unsatisfactory. Rotter (14) found a retest correlation of +.81 after one week's interval (80 subjects). The correlation decreases with time. Osterweil and Fiske (10) found that after three weeks 80 per cent. of the responses were changed in some degree.

Validation: Various criteria have been used to validate sentence completions, from observer ratings to interview data. As with many other psychological methods correlations have not been impressive, and the question arises, which method is validating which?

Sacks (16) on a sixty-item first person test, obtained correlations ranging from +.45 to +.57 between psychiatric ratings and degrees of disturbance revealed by the test, as established by three psychologists.

Rohde (13) correlated each of several traits from the sentence completions with combined ratings, etc., from teachers, school reports, parents, interview, etc., and found mean correlations of +.78 for boys and +.82 for girls.

Rotter (14) obtained correlations of +.50 for girls and +.62 for boys between sentence completion data and instructors' ratings.

In clinical practice it may be better not to trouble too much about

questionable methods of validation, but to incorporate the completion data in the total picture, i.e. along with clinical data from other sources.

THE PRESENT EXPERIMENT

For some time the writer had been collecting records from both normal and psychiatric subjects on a sixty-item test used for routine clinical appraisal, and from psychiatric patients only on a second sixty-item test designed to measure certain attitudes. I shall not be concerned here with these, except to say that they appeared to be rather too long.

Experience with these tests did, however, help to suggest a forty-item test which was given to three groups of patients, as follows:

Group A: Twenty patients attending the medical out-patients' department of a large general hospital. Seven had digestive disturbances, five respiratory, and there were cases of arthritis, diabetes mellitus, menopause, sterility, essential hypertension, etc. One case had been treated by electroconvulsive therapy for depression in the past.

Group B: Twenty neurotic and psychopathic patients attending the day hospital unit of an early treatment centre. They covered the usual range of ailments found in a psychiatric clinic—with anxiety states, phobic states, depression, hysteria, psychopathy, etc.

Group C: Twenty in-patients at the same centre. These were basically similar to Group B patients but were considered, in general, to be rather more disabled.

Each of the three groups was equally divided as to sex.

The general hospital group was older than the other two, with an average age of 48 as against 36 and 34 for Groups B and C. Group A were taken at random from the waiting hall, while Groups B and C were successive admissions. The samples are small, but the experiment was in the nature of a pilot study to see if the test data could differentiate between groups which appeared, *prima facie*, to differ in degrees of psychological adjustment.

There seem to have been few comparative studies with the test. A recent study by Luft, Wisham and Moody (7) of sixty-two miscellaneous male patients aged 19 to 65, showed psychiatric patients to be the most pessimistic on the test, followed by the gastro-intestinal and the cardiovascular cases, with surgical cases at the more optimistic end of the scale.

In another comparative study Goodwin (4) found that peptic ulcer cases showed more hostility than asthmatics.

Returning to the experiment: The responses from the three groups were scored on a three-point scale from plus-one for optimistic or "positive" responses, through zero for neutral responses, to minus-one for responses deemed to be pessimistic, etc. Samples of the three types of response are given later.

Of the forty items 11 were expected to produce mainly plus answers, 12 mainly negative answers, and 15 mainly neutral. The latter permit more freedom of response than the other two categories with the positive and negative ones about equal, as Table I shows.

The expected or theoretical mean score would be -3 . For the whole group the obtained mean score was -2.4 points. Mean scores for the three groups were: Group A $+2.2$ points, Group B -2.4 points, Group C -5.0 points. These scores were in the expected direction.

TABLE I
Expected and Obtained Scores

Expected	No.	Obtained Percentage		
		+	0	—
Plus items	11	81·6	9·9	8·5
Zero items	15	41·4	21·4	37·2
Minus items	14	2·8	11·6	85·6

One cannot compare such small scores statistically, especially when signs are opposite, but a χ^2 test on the *total* scores shows the difference between the three groups to be significant at the 1 per cent. level of confidence. The best discrimination accrues from a comparison of negative (“maladjustment”) scores, as will be seen from Table II.

TABLE II
Total Scores for the Three Groups

Group	Scores			Omissions	Total
	+	0	—		
A	302	132	259	107	800
B	277	109	326	88	800
C	294	86	394	26	800
	<u>873</u>	<u>327</u>	<u>979</u>	<u>221</u>	<u>2,400</u>

SEX DIFFERENCE

As Table III shows, there was no sex difference on overall scores but on neutral scores the sex difference was statistically significant at the 1 per cent. level of confidence.

TABLE III
Scores for Male and Female Patients

	Scores			Omissions	Total
	+	0	—		
Female patients	430	139	493	138	1,200
Male patients	443	188	486	83	1,200

Age: The correlation between age and scores for the total group was $+ \cdot 325$. In the psychiatric groups there was a definite tendency towards higher scores or better adjustment with age (day patients “ r ” = $+ \cdot 572$, in-patients “ r ” = $+ \cdot 658$), but in the general hospital group there was no such tendency (“ r ” = $+ \cdot 014$).

INTELLIGENCE

The correlation between intelligence—as measured by a selective vocabulary test—and degrees of adjustment showed little relationship (“ r ” = $+ \cdot 049$).

OMISSIONS

The sentence completions form one side of the picture: on the other side are the omissions. The overall omission rate was 9 per cent., which compares favourably with 25 per cent. on a sixty-item test. And there was no increase in omissions through the test, as in the longer one.

Significantly higher omissions ($p = .01$) were found in the records of female patients—all groups—and in those of the general hospital patients.

The correlation between intelligence and omissions is $-.253$, i.e. slightly higher omissions in patients of lower intelligence.

The negatively-loaded items, as one might expect, produced more omissions than the neutral or positive-loaded items (13 per cent., 8 per cent. and 5 per cent. respectively).

Neither age nor scores on the completion test showed much relationship with omissions (" r " = $+.136$ and $+.093$ respectively).

ITEM ANALYSIS

The responses to each item were recorded on cards and examined for group and sex differences and for evidence of the usefulness or otherwise of the items. In view of the fact that item analysis reduces the sample, only broad trends can be noted.

The forty items with sample responses are as follows: in some instances answers were almost wholly negative or almost wholly positive, in others all three types were encountered. In the latter case some examples of plus, negative and minus answers are given.

1. What puzzles me is:
 - Why the evolutionary process has not reduced illness.
 - Why the world is in such a hurry.
 - Why I can't keep going.
2. My best friend would say I:
 - Have a happy nature.
 - Am a silly woman.
 - Wonder how . . . is?
3. My happiest moments:
 - Are with my home and family.
 - When collecting my winnings.
 - When I am making things.
4. What annoys me most is:
 - Bragging and selfishness.
 - People who are the centre of attraction.
 - Myself.
5. I dislike people who:
 - Say one thing and mean another.
 - Run other people down.
 - Push others around.
6. If I had the chance I would:
 - Start all over again.
 - Become a professional singer.
 - Make my husband happy.
7. My childhood was:
 - Carefree
 - Lonely.
 - Happy but strict.

8. I am most at ease when:
I am at home with my friends.
Listening to classical music.
In the company of men.
9. Most men:
Are good and kind.
Want too much waiting on.
Bah!
10. The worst thing I ever did:
Was to run over a child.
Was to steal from a poorer man as a P.O.W.
Take an overdose.
11. In company I:
Feel relaxed.
Feel lost.
Am on edge.
12. To me sex is:
A beautiful and wonderful thing.
All right in its place.
Over-rated.
13. I suffer:
From head pains and indigestion.
Fools gladly.
But others suffer more.
14. I have always wanted to:
Be best at everything.
Go abroad.
Have a home and children.
15. I am embarrassed when:
People stare at me.
I see people half naked.
In the presence of my superiors.
16. The people I like best:
Are those who like children.
Are trustworthy, honest, etc.
17. Married life is:
Wonderful.
What you make it.
All mixed up.
18. I envy those who:
Are fearless, unruffled, have no worries, etc.
19. I can't understand what makes me:
Feel inferior.
So frightened.
Aggressive, depressed, etc.
20. To me the future looks:
Hopeful, doubtful, black, etc.

21. I feel I might have failed:
As a wife and mother.
To live up to my ideals.
But for my wife.
22. I believe I am best at:
Housework, understanding people, worrying, nothing, etc.
23. I secretly:
Wish I were romantic.
Long to erase the past.
Wish to get married.
24. My mother:
Is kind and generous.
Is strict and possessive.
Has too much to say for herself.
25. My life at home is:
Happy, etc. (in 70 per cent. of cases).
26. I have a fear of:
Passing out in the street.
Getting old.
Going insane.
27. When I am alone I:
Like to plan for the future.
Think of all the dreadful things I've done.
Sing opera.
28. Most women:
Are kindness itself.
Consider me incapable.
Think they are "it".
29. At school I:
Did well at games.
Had moments of glory.
Was made to feel small.
30. The best thing I ever did:
Was to save a child from drowning.
Was to finish a forced march as a P.O.W.
Pass my driving test.
31. I have a habit of:
Analysing everything.
Picking my skin.
Putting people on a pedestal.
32. My greatest weakness:
Is getting up in the morning.
Is self pity.
Is giving things away.
33. I am determined to:
Get better (mainly).
Get on in life.
Do all I can for my child.

34. My father:
 Is very dear to me.
 Is not interested in me.
 Is a drunken brute.
35. There are times when:
 I could scream.
 I feel like giving life up.
 The future looks bright.
36. My worst enemy might say:
 He is not bad.
 I have only myself to blame.
 I am putting it on.
37. My greatest regret is:
 I can't have children.
 I didn't learn a trade.
 I married the wrong man.
38. I get panicky if:
 I am on my own.
 I have to entertain.
 If any of my family are ill.
39. What I want most in life:
 Is to get better.
 Is to live in a decent district.
 Is to see my son grow up.
40. I look forward to:
 Getting better.
 Going back to work.
 My holidays.

DISCUSSION OF RESULTS

It has been mentioned that the *group differences* appeared most clearly in the negative items. The general hospital group managed to resist the negative "suggestion" quite often, especially in such items as "The worst thing I ever did", "I suffer", "I envy", "I feel I might have failed", etc. In other words they had more optimistic replies than the other two groups. On the other hand the psychiatric groups, especially the in-patients, revealed their pessimism even in items like "My best friend would say I" or "I have always wanted . . .", etc.

The psychiatric groups were, in general, more self-centred, and self-depreciatory. Self-reference was expressed obliquely as well as directly, by projection or generalization, e.g. "What puzzles me is . . . why some people have to suffer".

There was also more self-pity expressed by the psychiatric patient including items such as "What puzzles me is . . . Why God should leave me like this". Their complaints were almost entirely psychological, while general hospital patients complained more of physical ailments.

The general hospital group omitted more items than either of the other two groups. This agrees with the findings by Wilson (18). Just why this is so is open to question. One might speculate that there is more pressure to respond in the psychiatric patients.

Although there was no overall *sex-difference* in degree of adjustment, item analysis revealed certain trends. Female patients had significantly less neutral responses. They also appeared to be more altruistic, especially in relation to their families and friends, more preoccupied with their homes and letting their families down, more modest, rather more concerned over sexual misconduct (not mentioned by men), more derogatory about their own sex, more prone to blame themselves. No compulsive trends were mentioned by men, but were brought out by six of the female psychiatric patients, especially in Item 31 "I have a habit of . . .".

The above results show that the completions can discriminate both quantitatively between groups of patients, and between the sexes.

Apart from this the experiment yielded some useful information on the following points: 1. Length of test; 2. Lay-out; 3. Item selection; 4. Interpretation of protocols.

1. *Length of Test*

It is impossible to say what the optimal length of a test may be, because it is affected by the number and type of items, and the subject—his age, sex, intelligence, mood, need to communicate, the time of day and so on. Also, subjects in some countries are more test-conditioned than others. Some subjects complained about the length of the 40-item test. If the omission rate increases steadily through the test this may be one criterion of fatigue, boredom, irritation, etc.

A test which can be accommodated on one side of, say, a foolscap sheet, i.e. with 30 items, might be more acceptable. Some of the patients showed signs of displeasure when they found that there were more items on the back of the sheet.

2. *Lay-Out*

The early items of a completion test should be comparatively innocuous, cushioning possible shocks and leading the subject from superficial to deeper levels of functioning. In normal records defensive tactics in the early stages are fairly common, e.g., flippancy, superiority, evasion, etc., but in most instances the subject slips into a more serious mood, often touching on personal problems without, perhaps, realizing it. It is interesting that in the present experiment there was only one flippant response out of more than two thousand, i.e. "What puzzles me is . . . how many beans make five".

Although, ideally, every item should count, i.e. produce a good crop of useful information, it may be desirable to include a limited number of items as buffers, cross-checks, etc.

The *instructions* should be brief. It has been found that projection varies inversely with the exactness of the instructions. It has also been found that emphasis on speed does not produce better results. Early versions urged subjects to work quickly so that they would be less inclined to censor their responses. Rotter (14) found that stress on immediate response tends to produce short answers.

Space may be provided at the end of the test for comments which the subject may wish to make. Some of these are very revealing.

Anonymity is also desirable, though many subjects, given the choice to record name or initials, give their full names without compunction. It helps

to reassure the patient if the word "Confidential" appears prominently at the top of the test blank.

3. *Item Selection*

It transpired, on examination, that nearly half of the forty items had some unsatisfactory features.

Thirteen of the items, twelve of them neutral, were dichotomous. Although they yielded a wide range of scores, they produced a narrow range of ideas, perhaps as narrow as a choice technique would have revealed. But there were instances where the wording of the responses was informative, e.g. "My mother . . . is the best friend I have", or ". . . drinks too much".

Six of the items, five of them negative, proved to be monothematic and, therefore, not very informative either, e.g. "I can't understand what makes me . . . like this", etc., or "I am determined to . . . get better", etc.

Twenty-one mixed items were polythematic, e.g. "What puzzles me is . . .", "I envy those who . . .". Although such items may yield a wide range of answers, they may not be very useful for group comparisons. It is less easy, too, to pick out unique responses when there are almost as many categories as individuals. For this a larger sample would be necessary.

It looks, therefore, as if dichotomous and monothematic items are better for group purposes, while polythematic items are more suitable for qualitative interpretation.

Some items were quite obviously redundant, eliciting information almost identical with that from other items, e.g. "If I had the chance I would . . .", "I have always wanted to . . .", or "I have a fear of . . .", and "I tend to get panicky if . . .". Redundancy also occurred through opposition of items, e.g. "I am most at ease when . . .", and "I am embarrassed when . . .". There were other similarities, but not all of them could have been predicted from the wording of the "stems".

A few items were ambiguous as to scoring, e.g. "I dislike people who . . .", or "What annoys me . . .". Since most of the traits mentioned were undesirable, it seemed more logical to award a plus score rather than a minus to such items.

Some of the items, irrespective of their position in the test had a high omission rate, e.g. "I secretly . . . (33 per cent.)," "My worst enemy might say . . ." (25 per cent.), "The worst thing I ever did . . ." (22 per cent.). In items such as these one has to decide whether or not the information obtained outweighs the reduction in responses.

Item Criteria: Some criteria of "good" or informative items can now be formulated:

- (a) Phrases should be short and the wording simple.
- (b) Items should not be "overstructured" so that they leave the subject little freedom of response, e.g. "My worst enemy would call me a . . .". Such items may arouse irritation or evasion. Nor should they be understructured so that the subject may be embarrassed by too much freedom, e.g. "I . . .", "When I . . .", etc.
- (c) There should be no overlap between items unless it is designed for special reasons.
- (d) They should not encourage clichés, e.g. "money . . . is the root of all evil".

- (e) They should not put the subject on the defensive so that he censors his response or omits the item.
- (f) They should lend themselves to unambiguous scoring.
- (g) They should differentiate between individuals and, if possible, between groups also.
- (h) They should, in the writer's opinion, be framed in the first person for clinical use.
- (i) There should be a mixture of positive, neutral, and negative items so as to allow the subject to display both his assets and his liabilities.

4. *Interpretation*

In the sentence completion test, as in any other projective technique, interpretation of the individual protocol is essential; the material can be very revealing.

During the last war the test was used in both American and British armed forces. The records were unscored but were scrutinized for pointers or trouble spots.

In a forced choice method one can rarely be sure of the significance of ticks or underlinings. There is no guarantee that they reflect what was in the subject's mind when he did the test. If he is bored, angry, confused or pre-occupied he is likely to underline or tick at random. Written responses, even censored ones, are at any rate the subject's own, and tell us more about him. Most subjects when faced with an unfinished sentence have an urge to finish it—in Gestalt terms to effect a closure, though they may not always write their first thoughts.

Long experience with the test gives a background against which protocols become more meaningful and interpretations more valid. It enables one to sharpen one's inferences.

The test has an affinity with other projective methods such as the Rorschach Test and the free association method. One can, for instance, record common and original responses, and conduct an inquiry on the basis of the answers. Formal aspects can be dealt with, e.g., style, grammar, logic, spelling, etc.

Perhaps the most fundamental difference between the records of normal and abnormal subjects is in the degree of emotional detachment. Normal subjects tend to censor their answers more. But even here defences tend to be lowered as the test proceeds. The detachment allows them to be facetious, or critical, e.g. "My father . . . is a likeable rogue", "A husband . . . yes please", "What puzzles me is . . . what you expect to get out of this". This type of response may, of course, be a way of impressing the examiner, or of releasing tension, as well as a sign of relaxation and good spirits.

Anxiety shows itself in most records to some degree. It is less ego-involved in normals. A good example comes from a record of a normal subject temporarily away from home, who communicated a source of anxiety in three successive items: "I feel . . . anxious about my tomato seedlings", "At night . . . the temperature is about 50 degrees", "My worst . . . mistake was in sowing earlier than the instructions".

Sentence completions reveal not only areas of disturbance but also attitudes to certain situations, emotional modality and intensity.

Although, in interpreting the completions one is not concerned primarily with diagnosis, it is not too difficult to find signs pointing to the main diagnoses.

There are, for instance, the loose associations, denial of symptoms, irrelevance, negativism, etc., of the schizophrenic, the pessimism and paucity of response of the depressed person, the self-display or dramatization of the hysteric; anxiety, guilt, hypochondriasis, aggression, etc.

A well-designed completion test is a useful clinical instrument, and may be presented to the subject fairly soon after admission so that the doctor can, if he wishes, make use of the protocol in his interviews with the patient.

The test seems to be well received on the whole, more so than many questionnaires or inventories. The information received is more specific than that from, say, the Rorschach or the T.A.T. The writer can confidently recommend the use of a well-designed sentence completion test in conjunction with other projective tests such as those just mentioned.

SUMMARY

The Sentence Completion Method of personality appraisal and some modifications of the original technique have been outlined.

An experiment with a 40-item test on three groups of patients has been presented, with some quantitative and qualitative comparisons. It has been suggested that the completion method can differentiate between patient-groups, but that the interpretation of the individual protocol is perhaps the most valuable part of the information obtained from the test.

Suggestions have been made regarding the optional length of the test, the lay-out, and selection of items.

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