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Special Report

No. 2

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THE SUI SENTENCE COMPLETION TESTS: RETEST RELIABILITY,
SUSCEPTIBILITY TO SCORE-FAKING AND RELATIONSHIP TO
OTHER MEASURES OF PERSONAL ADJUSTMENT

by

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Office of Naval Research

Project NR 151-075
Contract 311(00)

"Research on Aptitude-for-Service Tests for Enlisted Personnel"

15 November 1952

As the title of this report indicates, the essential purposes of the present study were to secure an estimate of the retest reliability of the multiple choice sentence completion tests which have been developed as part of ONR Project NR 151-075, to assess their susceptibility to deliberate simulation of behavioral maladjustment and to determine their relationship with two other more or less accepted measures of personal adjustment, namely the Shipley Personal Inventory (3, 5) and the Taylor Anxiety Scale (4). The basic validity of the multiple choice sentence completion tests can be assessed adequately only through a comparison with acceptable criteria of personal adjustment in the Naval Service. This will be accomplished by a comparison of the test performances of recruits with their status after a period of 18 months following enlistment has elapsed. Since this basic validation necessarily implies a waiting period of considerable length before the criterion data can be secured, it was felt that an experimental study such as herein described could offer valuable indications with respect to the promise of these newly developed tests.¹

Procedure

One hundred male college students, enrolled in the introductory psychology course at the State University of Iowa, were given two series of tests with a two-week interval between testing sessions. The following tests were employed in the order presented:

¹Copies of Sentence Completion Forms A and B and the SUI revision of the Personal Inventory, Format C, will be found in Appendix A.

- A. First testing session:
1. SUI Sentence Completion Form Z (a free answer form).²
 2. Shipley Personal Inventory, Format C (SUI Revision).
 3. SUI Sentence Completion Form A (a multiple choice form empirically derived from a free answer form).
 4. Shay Multiple Choice Sentence Completion Test (2).³
- B. Interim of two weeks: The Minnesota Vocational Interest Inventory (1) was to be filled out during this time.⁴
- C. Second testing session:
1. SUI Sentence Completion Form A (RETEST).
 2. SUI Sentence Completion Form B (a multiple choice form made up of the same items as in SUI Sentence Completion Form Z).
 3. Shipley Personal Inventory - (RETEST).
 4. SUI Sentence Completion Form A (with instructions to "choose the completions on this test which will make you appear to have a very good character and healthy personality").
 5. SUI Sentence Completion Form A (with instructions to "choose those completions on this test which will make you appear least desirable for the armed forces").
 6. Shipley Personal Inventory (with instructions to "answer each of the items with the worst possible choice").
- D. Additional data were available on the Taylor Anxiety Scale which had been administered routinely to all students enrolled in the introductory psychology course.

^{2,3,4}The subjects' performances of these tests will not be considered in the present report.

Scoring of the Sentence Completion Tests

As indicated in previous status reports, the sentence completion tests were developed on the basis of the responses of two discrete groups of subjects, one being designated as "normal," the other as "psychoneurotic." As criterion groups, these groups were admittedly inadequate and the data were viewed as providing a source of promising test items and typical test responses rather than as validating data. From this pool of items, 50 were selected to comprise two multiple choice forms, Form A and Form B. Three possible completions for each item were selected, each completion being considered representative of one of the two criterion groups. Of these 50 items, the 30 most promising were selected to make up Sentence Completion Form A. The additional 20 items were used to make up Forms B and Z, Form Z being a free answer form containing the same items as Form B. The responses to the 20 items used for Forms B and Z did not discriminate as well between the two criterion groups but the items did appear to possess sufficient promise to warrant trial.

Tentative scoring keys were developed on the basis of expectations derived from an inspection of the responses of the two groups. It is these tentative scoring keys which have been employed in the present study.

Results

Retest Reliability

The retest reliability of Sentence Completion Form A as estimated by the product moment correlation between scores on the initial test and the

retest two weeks later, under standard conditions of administration, was found to be .772. (See Table 2.) The standard error of measurement was found to be 2.1. This estimate of reliability may be compared with that found for the Personal Inventory, under identical conditions of administration. With this test, the product moment correlation was found to be .775.

Susceptibility to Score-Faking

The means, standard deviations, and ranges of scores on the tests investigated in this study are presented in Table 1.

It will be noted that, under the "fake bad" condition of administration, mean score on Sentence Completion Form A shifted markedly in the direction of ill-health, the "fake bad" mean score being 2.6 standard deviations below the "standard" mean score. Thus it is evident that the test performance is quite susceptible to the influence of a deliberate set to appear maladjusted. However, that it is less susceptible to the influence of deliberate simulation than the Personal Inventory is suggested by the fact that the "fake bad" mean score in the latter test is 8.4 standard deviations from the "standard" mean score in the direction of ill-health.

On the other hand, performance on Sentence Completion Form A did not seem to be particularly susceptible to the effects of a deliberate set to appear as healthy as possible, the "fake good" mean score being only .8 standard deviations higher than the "standard" mean score.

Table 1
Means, Standard Deviations, and Ranges of Test Scores
(N = 100)

	<u>Mean</u>	<u>S.D.</u>	<u>Range</u>
Sentence Completion Form A	35.77	5.06	21-47
Sentence Completion Form B	18.70	3.81	8-26
Personal Inventory	3.18	1.88	0-7
Anxiety Scale	13.49	6.73	1-35
Sentence Completion Form A - "fake good"	39.66	3.89	29-48
Sentence Completion Form A - "fake bad"	22.74	4.24	14-33
Personal Inventory - "fake bad"	18.90	1.17	14-20

Relationship to Other Measures

estimates of the correlation between the Sentence Completion Tests and other measures of personal adjustment investigated in this study are presented in Table 2.

It will be noted that the correlations between Sentence Completion Form A and both the Personal Inventory and the Anxiety Scale are highly significant but of rather small magnitude. In contrast, Sentence Completion Form B does not correlate significantly with either the Personal Inventory or the Anxiety Scale and, indeed, not even with Sentence Completion Form A.

Discussion

The findings indicate that Sentence Completion Form A has satisfactory retest reliability, the estimate obtained in the present study being comparable to those usually found with personality inventories.

The initial decision to develop a test of the sentence completion type was based on the hope that such an instrument would be relatively unsusceptible to the effects of deliberate simulation or dissimulation on the part of the subject. It is evident that this hope has been far from realized in the present preliminary forms of the sentence completion test. Performance on Sentence Completion Form A does appear to be significantly less susceptible to deliberate intent to simulate maladjustment than does the "grossly obvious" Personal Inventory. Nevertheless, it is clear that total performance on this Sentence Completion Test is quite significantly changed by such intent.

Table 2
Product Moment Correlations among Test Scores

	Sentence Completion Form A (I)*	Sentence Completion Form A(II)	Sentence Completion Form B	Personal Inventory (I)	Personal Inventory (II)	Anxiety Scale
Sentence Completion Form A (I)*	——	.7717**	.0304	.2823**	.2899**	.3135**
Sentence Completion Form A (II)		——	.0282	.3207**	.3920**	.4132**
Sentence Completion Form B			——	.1607	.1346	.1112
Personal Inventory (I)				——	.7752**	.2716**
Personal Inventory (II)					——	.3974**

*First and second administrations of a test are indicated by (I) and (II).

**Significant beyond the 1% level of confidence.

It is reasonable to expect that the individual items in the test will vary significantly with respect to this characteristic of susceptibility to "score-faking." An analysis of the individual items in this regard would therefore seem to be indicated and such an item analysis is planned after substantial criterion data have been received and a truly valid scoring key has been established.

The relative inability of the subjects in this study to "fake good" on Sentence Completion Form A is difficult to interpret at this time. This relative inability may be due to the subtlety of the items but, in the present stage of development of the test, it may well be a function of defects in the scoring key.

The positive and significant correlations of Sentence Completion Form A with the Personal Inventory and the Anxiety Scale support the assumption that this preliminary form of the test possesses potential validity and that it should be possible to develop an instrument of considerable practical utility when adequate criterion data become available. Conversely, the lack of correlation of Sentence Completion Form B with the Personal Inventory, the Anxiety Scale, and Sentence Completion Form A indicates that, either because of poor item selection or a defective scoring key, this test offers little hope for the development of a significant screening instrument. However, item analysis may yield a number of items which possess sufficient discriminatory ability to warrant their utilization in the final form of the Sentence Completion Test.

REFERENCES

1. Clark, K. E. The vocational interest patterns of members of A.F. of L. trade unions. Technical Report No. 1, ONR Project NR 151-248, Univ. Minn., November 1948.
2. Shay, M. M. The construction of a multiple choice form of a sentence completion test. Unpublished M.A. thesis, Purdue Univ., 1950.
3. Shipley, W. C., Gray, F. E., and Newbert, N. The Personal Inventory, Short Form (Format C): Derivation and preliminary psychiatric validation. OSRD Report 3390, 1944; Publ. Bd. No. 34731. Washington, D.C.: Dep. of Commerce.
4. Taylor, J. A. The relationship of anxiety to the conditioned eyelid response. J. exp. Psychol., 1951, 41, 81-92.
5. Windle, Charles D., Erdice, Elisabeth, and Benton, Arthur L. Methodological aspects of the Personal Inventory. Special Report No. 1, ONR Project NR 151-075 (unpublished), Univ. Iowa, April 1952.

APPENDIX A

Shipley Personal Inventory, Format C (SUI Revision)⁵

SUI Sentence Completion Form A⁶

SUI Sentence Completion Form B⁶

⁵Four items of the original Format C have been altered to make the format of a consistently forced-choice type. "Correct" choices are marked on the test copy. A low score is considered indicative of good adjustment.

⁶These multiple choice forms were empirically derived from responses to a free answer sentence completion test administered to "normal" and "psychoneurotic" subjects. Score values tentatively assigned to each choice are marked on the test copies. A high score is considered indicative of good adjustment.

Name _____ Ser.No. _____ Date _____

Age _____ Sex _____ Place _____ Company _____

In each question, mark (X) the answer which fits you best. Even if neither answer fits you very well, mark the one that fits you better than the other.

- | | |
|--|---|
| 1 I graduated from high school (X) | 1 I did not graduate from high school () |
| 2 I was a sickly child () | 2 I was an active child (X) |
| 3 I have felt bad more from head cold (X) | 3 I have felt bad more from dizziness () |
| 4 I seek excitement (X) | 4 I avoid excitement () |
| 5 I like to have people do things my way (X) | 5 I like to have people figure things out for me () |
| 6 I am more nervous () | 6 I am more easy going (X) |
| 7 Somehow I never could find enough to do in my free time () | 7 My free time always seemed to be filled (X) |
| 8 I wish I wouldn't feel so tired () | 8 I wish I could have a more responsible job (X) |
| 9 I wish I could have more excitement (X) | 9 I wish I weren't bothered by bad dreams () |
| 10 I wish I didn't have so many aches and pains () | 10 I wish I wouldn't keep changing my mind (X) |
| 11 I wish I weren't so nervous () | 11 I wish I wouldn't keep putting things off (X) |
| 12 I wish I could get myself to take more chances (X) | 12 I wish worrying wouldn't make me sick to my stomach () |
| 13 I have more headaches than the average person () | 13 I do not have as many headaches as the average person (X) |
| 14 The hours at night seem long () | 14 The hours at night pass very quickly (X) |
| 15 I like most any kind of food (X) | 15 I have a poor appetite () |
| 16 After exertion I feel hungry (X) | 16 After exertion I feel dizzy () |
| 17 When excited I feel weak () | 17 When excited I feel stronger (X) |
| 18 I think I might like to watch a surgical operation sometime (X) | 18 The sight of blood upsets me () |
| 19 My heart sometimes speeds up for no reason at all () | 19 I never notice my heart beating (X) |
| 20 I have never gone to a doctor for headaches or dizzy spells (X) | 20 I have occasionally gone to a doctor for headaches or dizzy spells () |

Name _____ Ser.No. _____ Date _____
 Age _____ Sex _____ Place _____ Company _____

Below are some incomplete sentences, each with three possible endings. Read each sentence and the three endings carefully and check the ending which best describes how you feel or what you think. Even though no ending may exactly express your feeling or opinion, check the one that comes closer to expressing it than the other two. Check only one ending for each sentence.

- 1) I was happiest when
 I was at home with my family.
 I got a good job.
 I was not worried about my problems.
- 2) One must never
 trust other people too much.
 there is nothing one must "never" do.
 give up.
- 3) Mother was all right but
 I didn't appreciate her.
 she nagged a lot.
 she lacked understanding.
- 4) As a boy my greatest trouble
 was making friends.
 was feeling inferior to others.
 was shyness.
- 5) I feel like cursing when
 I think about the world situation and war.
 I can't get something I want.
 things go wrong.
- 6) When people are praised they
 work better.
 may get conceited.
 deserve it.
- 7) I used to daydream about
 being famous.
 flying an airplane.
 being an athlete.
- 8) I feel very close to people who
 understand me.
 have troubles.
 have similar interests.
- 9) She was happiest when he
 did what she wanted.
 made love to her.
 asked her to marry him.
- 10) People would do anything in order to
 protect themselves.
 make money.
 be happy.
- 11) The thing about a baby is
 its helplessness.
 how fast it grows.
 that you can make it become whatever you want.
- 12) When criticized for my behavior, I
 resent it.
 try to correct my errors.
 pay no attention.
- 13) What meant most to me was
 my achievements.
 being praised for things I did.
 making my parents happy.
- 14) I felt that Mom and Dad
 were good to me.
 were not happy together.
 were fine people.

- 15) Because of Mom, I
 am sometimes unhappy.
 am a better man.
 was born.
- 16) I used to feel bad about
 my family life.
 hurting people's feelings.
 my personality.
- 17) The thing I value most in my closest friend
 is a sense of humor.
 is understanding.
 is loyalty.
- 18) Boys have more fun than girls
 is an untrue statement.
 in outdoor play.
 because they are not as restricted.
- 19) I cannot control myself when
 I get angry.
 people pick on someone smaller.
 I want a woman.
- 20) The thought of an unborn baby
 is unpleasant to me.
 has no meaning to me.
 is interesting to me.
- 21) I feel like smashing things when
 things don't go my way.
 I am falsely accused.
 I never feel like smashing things.
- 22) When people make fun of me
 I laugh with them.
 I don't like it.
 I feel unhappy.
- 23) When I saw that others were doing better, I
 felt discouraged.
 quit.
 tried harder.
- 24) I sometimes hated father because
 he tried to run my life.
 he was too strict.
 I never hated him.
- 25) We tend to forget the type of experiences which
 are not important.
 we are ashamed of.
 are unhappy.
- 26) I like people at parties who
 treat me nicely.
 are quiet.
 act natural.
- 27) She disliked him when he
 got too affectionate.
 was inconsiderate.
 criticized her and her parents.
- 28) What makes me angry is
 my own faults.
 being pushed around.
 reckless driving.
- 29) Most children are
 likable.
 spoiled.
 intelligent.
- 30) I am afraid
 there may be a depression.
 of tests like this.
 of what others think of me.

Name _____ Date _____

Age _____ Sex _____ Marital Status _____ Educational Status _____

Below are some incomplete sentences, each with three possible endings. Read each sentence and the three endings carefully and check the ending which best describes how you feel or what you think. Even though no ending may exactly express your feeling or opinion, check the one that comes closer to expressing it than the other two. Check only one ending for each sentence.

- | | |
|---|---|
| <p>1) The thing a woman looks for in a man is
 <input checked="" type="checkbox"/> character.
 <input type="checkbox"/> money.
 <input checked="" type="checkbox"/> love, protection and companionship.</p> | <p>8) I dream of
 <input checked="" type="checkbox"/> Jeannie with the light brown hair.
 <input checked="" type="checkbox"/> success.
 <input checked="" type="checkbox"/> women.</p> |
| <p>2) I couldn't get along without
 <input checked="" type="checkbox"/> my family.
 <input type="checkbox"/> someone to love me.
 <input checked="" type="checkbox"/> belief in myself.</p> | <p>9) I get distracted when
 <input checked="" type="checkbox"/> I think about my problems.
 <input checked="" type="checkbox"/> there is too much noise.
 <input checked="" type="checkbox"/> people watch me.</p> |
| <p>3) Most women are
 <input checked="" type="checkbox"/> easily flattered.
 <input checked="" type="checkbox"/> so different I can't describe them as a group.
 <input checked="" type="checkbox"/> frustrated.</p> | <p>10) I like children who are
 <input checked="" type="checkbox"/> cheerful.
 <input checked="" type="checkbox"/> well-behaved.
 <input checked="" type="checkbox"/> friendly.</p> |
| <p>4) My idea of a mature adult is one who
 <input type="checkbox"/> can think for himself.
 <input checked="" type="checkbox"/> is willing to accept responsibility.
 <input checked="" type="checkbox"/> acts his age.</p> | <p>11) I suffer most from
 <input checked="" type="checkbox"/> lack of money.
 <input type="checkbox"/> my own faults.
 <input type="checkbox"/> the weather.</p> |
| <p>5) Most of all I wanted to
 <input type="checkbox"/> be accepted.
 <input type="checkbox"/> get a good job.
 <input type="checkbox"/> travel.</p> | <p>12) The difference between Mom and Dad was
 <input type="checkbox"/> their ideas about raising children.
 <input type="checkbox"/> one was more domineering than the other.
 <input type="checkbox"/> one was more understanding than the other.</p> |
| <p>6) I failed when
 <input checked="" type="checkbox"/> I didn't work hard enough.
 <input type="checkbox"/> I wanted most to succeed.
 <input type="checkbox"/> I have never stopped trying, so I have never really failed.</p> | <p>13) Babies sometimes make me
 <input type="checkbox"/> want to get married.
 <input type="checkbox"/> irritated.
 <input type="checkbox"/> feel helpless.</p> |
| <p>7) Children should be punished
 <input type="checkbox"/> when they do not behave.
 <input type="checkbox"/> seldom or never.
 <input type="checkbox"/> when they do not obey their parents.</p> | <p>14) I would like the men under me to
 <input type="checkbox"/> be happy.
 <input type="checkbox"/> cooperate.
 <input type="checkbox"/> think for themselves.</p> |

15) I despise

- no one that I can think of.
- loud, conceited people.
- two-faced people.

16) Girls are nicer than boys

- most of the time.
- is not true.
- sometimes.

17) My greatest fault

- is my temper.
- is trying too hard.
- is that I can't assume responsibility.

18) People get upset when

- they find out they aren't as important as they thought.
- I do something they don't like.
- things go wrong.

19) Most men are

- too different to be described as a group.
- friendly.
- not sincere with a woman.

20) I often wished

- I had more money.
- I was dead.
- I was famous.

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