

Originality in Relation to Personality and Intellect¹

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THE PURPOSE of this paper is two-fold: (a) to report relationships observed in a sample of normal men between a measure of originality and measures of certain other aspects of personal and intellectual functioning, and (b) more especially, to consider the statistically significant correlates of originality both when intelligence is partialled out and when it is systematically varied through special selection of Ss.

The study employed a wide variety of psychological tests in a living-in assessment setting, using as Ss a sample of military officers. Both because of the nature of the sample and because of the method employed for discovering significant relationships, several restrictions upon the generalizability of the results must be recognized. For one thing, correlation coefficients between the measure of originality and several hundred other variables were computed in a search for significant associations, and the observed correlations have not as yet been checked in any other sample. Moreover, the Ss themselves were not selected with a view to discovering the traits of original persons; they had not engaged themselves in work which called for a high order of original thought, nor was originality an important value in their lives. In brief, the correlations to be reported may not reflect anything concerning the

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way in which highly creative people differ from the norm. The results therefore are germane to the question of how originality varies with other personal characteristics only if originality be considered as a variable which is distributed continuously throughout the general population.

In spite of these strictures inherent in the design of the study, there is some reason to believe that the results are generalizable to the problem of creative process in the highly original person. In an earlier report (4) on this same group of *Ss*, it was shown both that originality in free-response performance tests is sufficiently consistent across tests to be considered a dimension, and that in addition the test dimension itself is related to personality variables which had been hypothesized on theoretical grounds to be characteristics of highly original persons. Thus the testing of theory in that study suggests that generalizable relationships may be discovered in this sample.

TEST MEASURES OF ORIGINALITY

Eight tests which were presumed to measure originality or to provide a medium for its expression by the *Ss* and its discernment by raters were used. Three of these tests were developed by Guilford and his associates in the Project on Aptitudes of High-level Personnel at the University of Southern California, and have been shown by them to emerge with high loadings on a factor identifiable as originality (12). The three tests are (a) Unusual Uses, (b) Consequences B, (c) Plot Titles B. Unusual Uses calls upon the *S* to list six uses to which each of several common objects can be put, and it is scored for infrequency, in the sample under study, of the uses proposed. In Consequences B the respondent is asked to write down what would happen if certain changes were suddenly to take place, and a score reflecting the cleverness or remoteness of the consequences suggested is obtained. In Plot Titles B the *S*'s score is the number of clever, as opposed to obvious or ordinary, titles he suggests for two story plots.

In addition to the three tests from the Guilford creativity battery, two standard projective tests, the Rorschach (18) and the Thematic Apperception Test (17), were used. The Rorschach O+ count was taken as one measure of originality, and the TAT stories were rated for originality by two raters working independently. A sixth test measure was provided by a Rorschach-like set of inkblots which had been developed by the present writer to measure threshold for the human movement response (5), but which in this context was scored simply for infrequency of the percepts reported by the *S* in protocols of the sample studied. A count of highly infrequent but correct anagram solutions to the test word "generation" provided a seventh measure, and a rating of the originality of a story composed by the *S* in which he was called upon to use all of the words in a standard list of fifty randomly selected common nouns, adjectives, and adverbs pro-

vided the eighth. These measures, their reliabilities, and their interrelations have been described in full elsewhere (4). In the present report the sum of the standard scores earned by each *S* on all eight tests is taken as a single measure of originality, and that variable will be referred to herein as the Originality Composite.

THE *Ss* AND THE METHOD OF STUDY

The sample under study consisted of 100 officers in the United States Air Force, all were of the rank of captain, and they ranged in age from 27 to 50, with a mean of 33. As a group they were well above average in intelligence, in education, in physical health, and in personal stability. In preservice socioeconomic background they tended to be lower middle class. Most of them were combat veterans, and many had been decorated for valor either in World War II or in the Korean conflict. All but three were married, and most of them had at least two children. As a group they were less variable than men-in-general on a wide variety of psychological measures, and they were consistently above the average of the general population on variables favorable to personal effectiveness. A full description of the sample and of its standing relative to the generality on a variety of psychological tests is given elsewhere (10).

The *Ss* were studied in groups of ten for three full days at the Institute of Personality Assessment and Research. The method of study emphasized observation of the *Ss* in informal social interaction, situational tests, interviews, group discussions, charades, and the like. Thus there was ample opportunity for the social characteristics of the *Ss* to manifest themselves, and the raters were in a position to observe spontaneous and highly varied behavior. In addition, the subjects were administered an extensive battery of standard psychological tests.

Observations made by staff members during the assessment period were put in summary form and prepared for statistical analysis mainly through two techniques: a Q-sort deck of 76 statements descriptive of personal functioning,² and an adjective checklist consisting of 300 common, personally descriptive adjectives (10).³ Both techniques were used by staff members at the conclusion of each assessment period to describe each assessee.

The Q-sort statements were sorted on a 9-point scale, while the adjectives were checked simply as characteristic or not characteristic of the given *S*. A composite Q-sort description of each *S* was obtained by averaging the placements of the items by four staff members. The composite adjective description consisted of all adjectives which had been checked as characteristic of the *S* by at least three of ten raters.⁴

These descriptions were given without knowledge of the objective test performances of the *Ss*. No rater knew any *S*'s score on the Originality Composite at the time the descriptions were made.

Scores on the Originality Composite were correlated also with nearly

² Developed by Drs. Jack Block and Robert E. Harris.

³ Developed by Dr. Harrison G. Gough.

⁴ The staff observers consisted of the following psychologists: Donald W. Mackinnon, Director of the Institute of Personality Assessment and Research, Richard S. Crutchfield, Associate Director, Jack Block, Harrison G. Gough, Robert E. Harris, and Frank Barron, senior staff members; Wallace Hall, Donal Jones, Betty L. Kalis, Paul Petersen, and Donald G. Woodworth, research assistants.

200 other assessment variables, most of which had proved upon inspection to be normally distributed. Space limitations prohibit the listing of all these variables here, but the nature of most of them may be indicated briefly. A full description of each variable, together with statistics descriptive of the variable's distribution in this sample, may be found in another report (16).

Sources of variables

- The Concept Mastery Test (20) total score
- The Wesman Personnel Classification Test (21) Verbal and Numerical subtests and total score
- The Minnesota Multiphasic Personality Inventory (13) 14 scales
- The Rorschach Psychodiagnostic (18) 20 scores
- The Personal Preference Survey (14) 10 scales
- The Strong Vocational Interest Blank (19) 46 scales
- The Idea Classification Test (16) total score
- Charades (3) four ratings and five scores
- Staff ratings (16) 30 traits
- The Barron M-Threshold Inkblots (5) threshold for human movement and volume of human movement
- The Barron-Welsh Art Scale (2)
- Improvisations (16) 20 ratings
- The Gottschaldt Figures Test (16) total score
- The Bennett Mechanical Comprehension Test (7)
- The Minnesota Paper Form Board (15)
- The Chapin Social Insight Test (8)
- The Special IPAR Composite Personality Inventory (16) 19 scales
- The California Personality Inventory (10) 20 scales
- Form 60 of Berkeley Public Opinion Survey Scales (1) 3 scales

DIFFERENCES IN STAFF DESCRIPTIONS OF HIGH AND LOW SCORERS

The 25 highest scorers on the Originality Composite were compared with the 25 lowest scorers on both the Q-sort descriptions and the composite adjective descriptions. The Q-sort items which showed statistically significant differences are given below.

High Scorers

At the .001 level

- 1 verbally fluent, conversationally facile
- 2 high degree of intellect
- 3 communicates ideas clearly and effectively
- 4 highly cathects intellectual activity
- 5 is an effective leader
- 6 is persuasive, wins others over to his point of view

At the .01 level

- 7 is concerned with philosophical problems and the meaning of life
- 8 takes an ascendant role in his relations with others

Low Scorers

At the 001 level

- 1 conforming, tends to do the things that are prescribed
- 2 is stereotyped and unoriginal in his approach to problems
- 3 has a narrow range of interests
- 4 tends not to become involved in things
- 5 lacks social poise and presence
- 6 is unaware of his own social stimulus value

At the 01 level

- 7 slow personal tempo
- 8 with respect to authority, is submissive, compliant, and overly accepting
- 9 lacks confidence in self
- 10 is rigid, inflexible
- 11 lacks insight into own motives
- 12 is suggestible
- 13 is unable to make decisions without vacillation, hesitation, and delay

Adjectives which were applied differentially (at the 05 level or better) by the assessment staff to high and low scorers are given below, with the frequencies (i.e., number of cases out of 25 to which the adjective was applied) stated in parentheses after the adjective. Frequencies for high scorers are given first

<i>High Scorers</i>	resourceful (12-3)
interests wide (12-1)	reflective (9-3)
clever (9-1)	quick (9-3)
imaginative (9-1)	enterprising (11-4)
planful (9-1)	energetic (10-4)
poised (11-2)	organized (10-4)
determined (10-2)	fairminded (13-6)
talkative (10-2)	
logical (9-2)	<i>Low Scorers</i>
rational (9-2)	dull (0-8)
shrewd (9-2)	commonplace (1-11)
civilized (8-2)	simple (1-11)
loyal (8-2)	slow (1-10)
mature (8-2)	apathetic (1-8)
versatile (7-0)	rigid (1-7)
efficient (14-3)	unassuming (5-12)
initiative (13-3)	conventional (7-13)

From these Q-sort and adjective descriptions one is led to believe that considerable validity inheres in the originality measure. In brief, high scorers are seen as intelligent, widely informed, concerned with basic problems, clever and imaginative, socially effective and personally dominant, verbally fluent, and possessed of initiative. Low scorers are seen as conforming, rigid and stereotyped, un insightful, commonplace, apathetic, and dull.

However, the marked relationship of originality to verbal fluency and to rated intellect raises a question concerning the extent to

which this list of traits is determined by intelligence quite apart from originality. Perhaps these are in large part the traits of intelligent people, rather than of people who are not only intelligent but original as well. What we should like to know is the correlation between personality variables and that part of the variance in originality which is *not* associated with variance in general intellectual ability.

It is of course reasonable to expect that intelligence and originality will covary positively. If one defines originality as the ability to respond to stimulus situations in a manner which is both adaptive and unusual, and if one defines intelligence simply as the ability to solve problems, then at the upper levels of problem-solving ability the manifestation of intelligence will be also a manifestation of originality. That is to say, the very difficult problem which is rarely solved requires by definition a solution which is original.

It seems desirable, therefore, to partial out the effect of intelligence upon the correlations between the Originality Composite and other assessment measures. The Concept Mastery Test was here accepted as a good measure of general intelligence, though clearly with most emphasis upon the verbal comprehension factor in intelligence.

The product-moment correlation coefficient between the Concept Mastery Test and the Originality Composite in this sample is .33, a relationship significantly different from zero at the .01 level. When the Originality Composite is correlated with the other assessment measures and its relationship to the Concept Mastery Test is partialled out, the statistically significant partial r 's shown in Table 1 are discovered. (In Table 1 the variables are grouped, and the groups named, simply in a way which makes sense subjectively to the present writer, these are not clusters established statistically.)

TABLE 1

VARIABLES SIGNIFICANTLY ASSOCIATED WITH THE ORIGINALITY
COMPOSITE WHEN CONCEPT MASTERY TEST SCORES
ARE PARTIALED OUT

Disposition towards integration of diverse stimuli	<i>Partial r's</i>
1 Rorschach W	.52
2 Rorschach number of different determinants used	.37
3 Idea Classification Test number of classes discerned in sets of varied objects and property	.31

Energy, fluent output, involvement		
4	Improvisations degree of participation	35
5	Word Fluency Test total output	41
6	Charades motility	39
7	Charades fluency	28
8	Staff rating fluency of ideas	49
9	Staff rating drive	42
Personal dominance and self-assertion		
10	Improvisations dominance	37
11	Staff rating dominance	37
12	CPI Dominance scale	29
13.	Personal Preference Scale Active Phallic	47
Responsiveness to impulse and emotion		
14	CPI Impulsivity scale	39
15	Block Ego-control scale undercontrol	40
16	Rorschach sum C	38
Expressed femininity of interests		
17	SVIB Masculinity	- 31
18	MMPI Femininity (Mf)	33
19	PPS Feminine Identification	30
General effectiveness of performance		
20	Charades overall performance.	39
21	Improvisations total effectiveness	34
22	Staff rating Overall effectiveness in command functions in the Air Force	36
23	Staff rating Overall effectiveness in staff function in the Air Force	37

With the effect of verbal intelligence thus removed, the forces determining original response emerge in an interesting pattern. One cluster of variables which are in fact uncorrelated with intelligence consists of responsiveness to color on the Rorschach, high scores on Block's scale purporting to measure undercontrol of impulse, and high scores on the CPI Impulsivity scale. Perhaps the rating of motility in Charades (defined as amount of motoric activity by the *S* when attempting to convey a title to his teammates) is better grouped with this cluster too. What may be involved here is the tendency of the individual to discharge tension, through motor avenues of discharge, as immediately as possible, and hence to be relatively more under what in psychoanalytic terms would be called the domination of the pleasure principle rather than the reality principle.

Another cluster, that which is here labeled "energy, fluent output, involvement," would seem to indicate a higher level of drive, as well as ease of expression of the drive in work. This might well be a generic factor which shows itself interpersonally in the form of dominance and striving for power. The behavior apparently is

effective as well, judging from the correlations with various ratings of effectiveness of performance

The group of variables titled "disposition towards integration of diverse stimuli" suggests an openness in the more original Ss to a variety of phenomena, combined with a strong need to organize those phenomena into some coherent pattern. This might best be described as a resistance to premature closure, combined with a persistent effort to achieve closure in an elegant fashion. In brief, everything that can be perceived must be taken cognizance of before a configuration is recognized as a possibly final one.

The relationships noted between originality and femininity of interest pattern may conceivably be explained in terms of some of the dynamics suggested above, although they lend themselves also to a quite different sort of speculation. In a sense, the recognition by men of impulses or interests which are considered more appropriate in women, or at least more characteristic of women than of men in this culture, may be seen as one aspect of the more basic disposition to allow more complexity and contradictions into consciousness, this assumes, of course, an initial biological bisexual disposition in both men and women. Thus the more original men would permit themselves to be more aware of tabooed interests and impulses, and would seek to integrate these superficially discordant phenomena into a more complex whole.

Another possible explanation is that some degree of cross-sex identification is important for creativity in men and perhaps women as well. The creative act is a kind of giving birth, and it is noteworthy that as an historical fact intellectual creativity has been conspicuously lacking in women, whose products are their children. At the risk of making too much of a linguistic parallel, it might be said that nature has literally arranged a division of labor. Men bring forth ideas, paintings, literary and musical compositions, organizations of states, inventions, new material structures, and the like, while women bring forth the new generation. Perhaps it is also true that women who do the kind of creative work usually done by men may themselves have some degree of reversal of the usual sexual identifications, being relatively more masculine in interests and impulses than the generality of women; at any rate, such an hypothesis seems worth investigating.

However, it may be that the present finding requires no very high-flown explanation, since this sample of military officers was on the average more masculine (in terms of scores on the tests mentioned) than men-in-general, and high scores on femininity in these subjects represented quite unremarkable deviations in the feminine direction

CORRELATES OF LARGE DISCREPANCIES BETWEEN ORIGINALITY AND INTELLIGENCE

Data gathered in a larger sample of officers, most of whom did not take part in living-in assessment, permit another approach to the question of what personality traits go along with originality in the absence (in this instance, the conspicuous absence) of the usually covarying verbal intelligence. In this study, 343 officers of the rank of captain, 100 of whom comprised the sample discussed previously, were scored on four of the eight measures used in the Originality Composite. The four measures were Unusual Uses, Consequences B, Plot Titles B, and Word Synthesis Originality. The Concept Mastery test was also administered to these 343 officers. In addition, the officers themselves filled out the adjective checklist under instructions to give a candid and accurate picture of themselves.

Two groups were now selected for comparison with one another: all the *Ss* (fifteen in number) who were one standard deviation above the mean on the abbreviated four-measure Originality Composite while being one standard deviation below the mean on the Concept Mastery test, and all the *Ss* (23 in number) who were one standard deviation above the mean on the Concept Mastery test while being one standard deviation below the mean on the Originality Composite. The two groups will be referred to respectively as O_h-I_l and I_h-O_l . The adjectives which each group applied to itself significantly more often (at the .05 level of confidence) are given below.

O_h-I_l affected, aggressive, demanding, dependent, dominant, forceful, impatient, initiative, outspoken, sarcastic, strong, suggestible

I_h-O_l . mild, optimistic, pleasant, quiet, unselfish.

When these extreme groups are compared, the impulse-control dimension emerges most clearly as a determinant of originality

Subjects who are relatively original in spite of being relatively unintelligent show a lack of ego-control. They describe themselves as persons whose needs demand immediate gratification and whose aggressive impulses are out in the open. They are willful, obstreperous, and extreme individuals. One would not be inclined to select them as companions for a long trip in a submarine. By contrast, their relatively unoriginal but more intelligent fellows seem very much on the pleasant side, although perhaps a bit *too* bland and unwarlike, all things considered.

When one compares these self-descriptions with the staff descriptions of *Ss* who are *both* original and intelligent, it appears that intelligence represents the operation of the reality principle in behavior, and is responsible for such characteristics as the appropriate delay of impulse-expression and the effective organization of instinctual energy for the attainment of goals in the world as it is. To use another of the distinctions proposed by Freud in his theory of the functioning of the mental apparatus (9), primary process thinking to the exclusion of the secondary process marks the original but unintelligent person, secondary process thinking which carries ego-control to the point where the ego is not so much strong as muscle-bound marks the intelligent but unoriginal person, and easy accessibility of both primary process and secondary process marks the person who is both original and intelligent.

SOME SPECULATIONS

If these conclusions from the observed results be permitted for the moment, a speculative formulation suggests itself. The effectively original person may be characterized above all by an ability to regress very far *for the moment* while being able quite rapidly to return to a high degree of rationality, bringing with him the fruits of his regression to primitive and fantastic modes of thought (a variant of the phenomenon termed "regression in the service of the ego" by Lowenstein and Kris). Perhaps when the cortex is most efficient, or intelligence greatest, the ego realizes that it *can afford to allow* regression—because it can correct itself. A basic confidence in one's ability to discern reality accurately would thus facilitate the use of the powers of imagination.

Another way of putting this is to say that when the distinction between subject (self) and object is most secure, the distinction

can with most security be allowed to disappear temporarily. In such an individual there might therefore occur some transitory phenomena of the sort that in truly pathological form are characteristic of the very weak ego (such as hallucinations, sense of oneness with the universe, visions, mystical beliefs, superstitions, etc.) But in the highly creative individual the basis for these phenomena is precisely the opposite of their basis in mentally ill individuals. In paranoia, for instance, the fundamental ego-failure is the chronic *inability* to distinguish between subject and object, between inner and outer sources of experience, so that introjection and projection appear as characteristic mechanisms. In the creative person, this distinction may indeed have been attained with great difficulty and may have been won out of childhood circumstances which are ordinarily pathogenic, but once attained it is then maintained with unusual confidence. Thus the creative genius may be at once naïve and knowledgeable, being at home equally to primitive symbolism and to rigorous logic. He is both more primitive and more cultured, more destructive and more constructive, occasionally crazier and yet adamantly saner, than the average person.

SUMMARY

Eight free-response performance tests which purport to yield measures of originality were administered to 100 captains in the United States Air Force. A composite score on the test variable Originality was derived from this test battery, and psychologists' descriptions of high-scoring *Ss* were compared with descriptions of low-scoring *Ss*. The contrasting pictures which thus emerged seemed to indicate considerable validity in the Originality Composite, but they also raised some question concerning the way in which verbal intelligence alone might have determined some of the observed differences. Verbal intelligence was therefore partialled out from the correlations between the Originality Composite and other test performances and ratings. The significant relationships which remained when the effect of intelligence had been thus removed were grouped under these headings: (*a*) disposition towards integration of diverse stimuli; (*b*) energy, fluent output, involvement, (*c*) personal dominance and self-assertion; (*d*) responsiveness to impulse and emotion, (*e*) expressed femininity of interests; (*f*) general effectiveness of performance. In a larger sample, consisting of 343 officers, the

self-descriptions of Ss relatively high on Originality but relatively low on Intelligence were compared with self-descriptions of officers low on Originality but high on Intelligence. The former group characterized themselves by adjectives which suggested undercontrol of impulse, while the latter group described themselves as unusually well-controlled. An interpretation of these results in terms of the Freudian theory of the functioning of the mental apparatus was made, and some further speculations going beyond the present data were advanced.

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