

PERSONALITY AND TEST TAKING MOTIVATION

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The ability test is an instrument frequently used in personnel assessment, but the motivation of the subjects for test-taking (TTM) is hypothesized so that it can affect its validity. Previous research on this topic has shown that it is related to some personal variables, such as abilities, performance factors, race and so on. However, personality was not studied as an explanatory factor of the TTM. In this research the relation of TTM with personality and motivational distortion was observed. Personality was conceptualized using the five-factor model. We hypothesized that Neuroticism, Extraversion, Openness and Conscientiousness would be correlated with negative and positive attitudes to test-taking. Concerning to the relation between TTM and motivational distortion, we hypothesized that positive attitudes for test-taking will be correlated with motivational distortion. Two samples of subjects were used. Sample A is composed of 145 students (unemployed) and Sample B has 187 subjects, all in employment, the majority in clerical jobs. The results show that personality factors are related to TTM in the way hypothesized. Furthermore, the labor situation of the subjects has no effects over TTM and the motivational distortion does not appear related to TTM. In the discussion comments are made on the implications of these findings for personnel assessment.

Personalidad, Evaluación de Personal y Motivación para la Realización de Tests. Los tests de habilidades son instrumentos utilizados con frecuencia en la evaluación de personal, pero la motivación de los sujetos para realizarlos (TTM) puede afectar a su validez. La investigación previa sobre este tema ha mostrado que la TTM está relacionada con algunas variables personales, tales como las habilidades, los factores de rendimiento, la raza, etc. Sin embargo, la personalidad no fue estudiada como factor explicativo de la TTM. En esta investigación se estudió la relación entre la TTM y la personalidad y la distorsión motivacional. La personalidad fue conceptualizada usando el modelo de cinco factores. Nosotros hipotetizamos que el Neuroticismo, la Extraversión, la Apertura y la Escrupulosidad correlacionarían con las actitudes positivas y negativas hacia la realización de tests. Sobre la relación entre la TTM y la distorsión motivacional, formulamos la hipótesis de que las actitudes positivas hacia la realización de tests correlacionarán con la distorsión motivacional. Se utilizaron dos muestras de sujetos. La muestra A esta compuesta por 145 estudiantes (desempleados) y la muestra B por 187 sujetos, todos empleados, la mayoría en empleos administrativos. Los resultados indican que los factores de personalidad están relacionados con la TTM del modo que se hipotetizó. Además, la situación laboral de los sujetos no tiene efectos sobre la TTM ni la distorsión motivacional aparece relacionada con la TTM. En la discusión, se comentan las implicaciones que estos hallazgos tienen para la evaluación de personal.

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Ability tests are one of the widely used instruments for personnel assessment in

European countries and in America, in accordance to recent surveys conducted in both continents (see, e.g. Bruchon and Ferrieux, 1991; Prieto, Blasco and Quintanilla, 1991; Robertson and Markin, 1986; Ryan and Sackett, 1987; Schmidt, Ones and Hunter, 1992; Smith, 1991). To check if the tests are effective in practice, traditionally, the personnel selection research has consisted of (1) the choice of several variables that are considered they are important for the performance in a job, (2) making or using measurement tools in the assessment of those variables, and (3) observing the relationship between the position of the subjects in those variables and their performance in the job (Guion, 1965; 1976; 1987). This process can be seen as general for all different models of personnel assessment proposed since Münsterberg (1913) and Freyd (1923) to the Principles for Validation and Use of Personnel Selection Procedures (APA, 1987; Smith and Robertson, 1985). The variations in the models do not affect substantially this plan.

Also, most of the models have in common the supposition that the assessment procedures -generally tests- will be individually validated for each job, organization and human group (Guion, 1965). In other words, it is assumed that instruments with an adequate validity coefficient for a job could not be valid for another job, although the two jobs have similar tasks and functions, and as a consequence the same abilities appear necessary in the jobs for a good performance. This assumption has been labelled situational specificity hypothesis in personnel selection. The great variability in the validity coefficients found by Ghiselli (1966, 1973) was a reinforcement of this hypothesis. According to Ghiselli, most of this variability is a consequence of intrinsic factors with jobs.

However, an extrinsic factor was recently identified and such as factor could

have important effects on the reliability and validity of the tests and questionnaires used in the personnel selection processes. This factor is the motivation of subjects (employees or applicants) to taking the tests (Arvey, Strickland, Drauden and Martin, 1990). The "Test-Taking Motivation (TTM)" is defined as the positive or negative attitudes for answering the tests. This motivation could affect significantly the size of the validity coefficients. Nevertheless, the research carried out on this question is still very small.

In one of the first studies in the area, Arvey, Strickland, Drauden and Martin (1990) conducted a research on the motivational components of the test-taking, using the Test Attitude Survey (TAS). When actual employees were compared to applicants, and the effects of ability were neutralized, these authors found that the applicants showed higher test-taking motivation and they made more effort to answer correctly. Also, Arvey et al. (1990) found that there are individual differences and performance factors that are related to the TTM. The individual differences studied by Arvey et al. (1990) included: mechanical and numerical abilities, ability for tool use, and the race, sex and age of subjects. The cognitive abilities (mechanical and numerical) were significantly correlated with the factors of the TAS. Also, the other variables were correlated to test attitudes, but the size of coefficients was smaller.

In another study partially related to the question of test-taking motivation, Schmit and Ryan (1993) showed that the type of situation in which the assessment process was carried out might modify the structure of the self-report measures. For example, the structure could be different if the assessment process is identified as a personnel assessment process or as an anonymous assessment for research. Schmit and

Ryan found that in a personnel selection situation the subject responds using an "ideal employee" as a frame of reference, while in an anonymous assessment the frame of reference could be "the description of a stranger".

For their part, Smither, Reilly, Millsap, Pearlman, and Stoffey (1993) found that the applicants' reactions to assessment procedures may be of practical importance because of influences on the organizations' attractiveness to candidates and possible effects on assessment procedures validity and utility.

Therefore, taking as a whole all this research, a confluence among the findings of the three researches can be seen. In the three cases, the effects of the TTM appear relevant for the personnel assessment procedures. However, partly due to the fact that this field of research is new, the relation between TTM and other variables, such as personality factors or answering bias, were not studied.

The relation of the TTM to personality appears relevant in the light of the recent changes in the personality area. In the eighties the five factor model of personality was consolidated and it became the dominant paradigm in the field (Digman, 1990). The model has its origin in the initial works by Fiske (1949), Norman (1963), and Tuppes and Christal (1961). These authors cannot reproduce the factorial structures by Cattell (1948). Fiske, Norman, and Tuppes and Christal only reproduce a highly stable structure with 5 factors and not the 16 factor structure (see John, 1990). Nevertheless, there are differences in the factor names, the most accepted are those suggested by Costa and McCrae (1985, 1992). According to Costa and McCrae the factors are: Neuroticism, Extraversion, Openness to Experience, Agreeableness, and Conscientiousness. Neuroticism concerns the degree to which

the individual is insecure, anxious, depressed, and emotional versus calm, self-confident and cool. Extraversion concerns the extent to which individuals are gregarious, assertive, and sociable versus reserved, timid, and quiet. Openness to Experience differentiates between individuals who are creative, curious, and cultured versus practical, with narrow interests. Agreeableness concerns the degree to which individuals are cooperative, warm, pleasant versus cold, disagreeable, and antagonist. Conscientiousness measures the extent to which individuals are hardworking, organized, and persevering versus lazy, disorganized, and undependable.

Also, the answering biases (e.g. good faking; social desirability; motivational distortion; etc.) could be relevant factors that explain the test-taking motivation. The motivational distortion is the most investigated answering bias (Seisdedos, 1988, 1993). According to this author, when answering a questionnaire (e.g. personality inventories) or a test presented in the form of a questionnaire, such as the simulations of low fidelity (Motowidlo et al. 1990), the subjects appear to show a disposition to adapt their answers to the surrounding demands. Seisdedos (1993) sees this bias as an "intelligent form of the subject's adaptation (p. 95)" and he sees the motivational distortion as one of the most influential factors in the personnel assessment process in which questionnaires or interviews are used. The research conducted by Seisdedos show that the high distortion subject defines himself with more socially desirable adjectives (e.g. punctual, emotionally stable, relaxed, assertive, responsible, and so on).

Therefore, personality, motivational distortion and test-taking motivation are three variables that could be related. For example, it might be that different personality factors could be related to a higher

or smaller test-taking motivation. Also, it is possible that the labor experience of subjects have effects on the relation between personality factors and TTM. Furthermore, due to the fact that subjects can bias their answers to the self-report instruments in personnel assessment situations, high distortion could be related to positive TTM. However, the actual investigations do not answer these questions and, thus the present research has been directed to study the relationship among those variables. The aim of this research is to answer three questions: (a) What is the relationship between the big five and the test-taking motivation? ; (b) Is the test-taking motivation related to the motivational distortion? ; (c) Do individuals with labor experience have different attitudes to test-taking from subjects without labor experience? . Although the study is an exploratory one, based on the description of the big five and the motivational distortion, we will state some hypotheses concerning to the relation between the big five, the motivational distortion and the TTM:

(H1) Neuroticism will be correlated with a negative belief of the test.

(H2) Openness to experience will be correlated with positive test attitudes. Also, extraversion and conscientiousness will be correlated with positive attitudes to the tests.

(H3) The positive attitudes for test-taking will be correlated with motivational distortion.

Method

Samples

In this study two groups of subjects were used. The first sample (Sample A) was composed of 58 males and 87 females enrolled in a course of Work Psychology in the University of Oviedo (Spain). These individual had never been formerly employed did not have labor experience.

The second group of subjects (Sample B) included 49 males and 138 females that they were in employment when they completed the questionnaires. The majority of individuals were employed in clerical jobs (administratives, secretaries, clerks, etc.). These subjects were also enrolled in the same course as the subjects in Sample A.

Instruments

a) *Test-taking Motivation*: This variable was assessed using the "Test Attitudes Questionnaire (TAQ)" (Salgado, 1994). This questionnaire is composed by two scales that assess two independent factors: "Test Anxiety and Poor Control" and "Motivation and Confidence in Tests". The subject high in Test Anxiety and Poor Control is characterized by a high level of anxiety in test situations, a high level of negative attitudes to the tests, and great difficulty to control examination situations and his or her own emotional reactions. For his or her part, the subject with a high score in Motivation and Confidence in Tests shows great confidence in him or herself, he or she sees the test situation as a positive challenge, and in consequence he or she has great confidence in tests and likes to take them. Each scale has 8 items and their answering format is made up of five points (Total Disagreement=1; Indecision=3; Total Agreement=5).

b) *NEO-FFI*: Personality was assessed using a Spanish version of the "NEO-Five Factor Inventory (NEO-FFI)" (Costa & McCrae, 1992). This questionnaire has 60 items that assess Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness. Each factor is measured by 12 items. The process of adaptation of the Spanish version used in this research was as follows: first, the senior researcher translated the NEO-FFI to Spanish; once the translation was complete, a back-translation was conducted by a bilingual person that was

unfamiliar with the English version of the NEO-FFI; then the two versions were forwarded to Authors and PAR, Inc. for review and suggestions for further revision. When the Spanish version was accepted by authors and PAR, Inc., data collection was begun (Salgado and Rumbo, 1995).

c) *Motivational Distortion*: It was assessed using the Spanish version of the Lie Scale of the EPI, form A. (Eysenck and Eysenck, 1964). This scale has 8 items with two possible answers: Yes and No. In the present research, we use a five point scale to answer the items of the Lie scale (Total Disagreement=1; Indecision=3; Total Agreement=5). In the Spanish adaptation, low scores indicate high distortion.

Procedure

The three questionnaires were presented in a little booklet and the subjects answered them in the same session. All subjects responded to the instruments in a volunteer form. To obtain more vividness of an assessment situation, the questionnaires were given to subjects after the completion of an exam corresponding to a subject of the course. Moreover, the answer was non-anonymous.

Results

In Table 1 it may be seen the reliability of the scales used in this study, and the descriptive indexes (mean and standard deviation) of the two groups of subjects included in the research. From this table, it results apparent that students and employees show very similar mean and Sd in all variables.

The correlations among personality factors, TTM and motivational distortion obtained from the Sample A (students) appear in Table 2. The results show that “Test Anxiety and Poor Control (TAPC)”, a facet of the TTM, is significantly correlated

Table 1
Reliability of the Scales and Mean and Standard Deviation of the two groups in Test-Taking Motivation, Motivational Distortion and Personality Dimensions

	Students (n= 145)		Employees (n= 187)		I.C.
	Mean	SD	Mean	SD	
Test anxiety and poor control	18.46	6.84	18.69	6.40	.77
Motivation and confidence in tests	23.14	6.58	23.90	5.40	.76
Motivational distortion (EPI-L)		30.96	4.97	29.64	4.79
Neuroticism (NEO-N)	35.60	5.92	36.22	5.59	.76
Extraversion (NEO-E)	41.79	5.24	40.71	4.68	.72
Openness to experience (NEO-O)	34.86	4.90	33.86	4.69	.58
Agreeableness (NEO-A)	38.43	4.78	37.72	4.89	.58
Conscientiousness (NEO-C)	39.50	5.03	38.61	4.99	.74

I.C.= Internal Consistency (Cronbach's Alpha)

Table 2
Correlations between Test-Taking Motivation, Motivational Distortion and Personality Dimensions in the Student Sample (N= 145)

	TAPC	MCT
Motivational distortion (EPI-L)	.10	-.02
Neuroticism (NEO-N)	.37**	.12
Extraversion (NEO-E)	.13	.16*
Openness to experience (NEO-O)	.05	-.05
Agreeableness (NEO-A)	.17*	.07
Conscientiousness (NEO-C)	.01	.17*

TAPC: Test Anxiety and Poor Control
MCT: Motivation and Confidence in Tests
* p< .05 one-tail test; ** p< .01 one-tail test

with two personality factors: Neuroticism and Agreeableness. The subject with a high level of Neuroticism tends to show high scores in Test Anxiety and Poor Control. This result is in accordance with the first hypothesis stated here, and it appears coherent because the core of Neuroticism is high anxiety and difficulty to cope with situations. Also the correlation between TAPC and Agreeableness appear expectable because the agreeable people are characterized by great sensitivity, submission,

modesty and difficulty to coping with others and with situations (McCrae and Costa, 1990). However, although the correlation could be expectable it was not stated previously. Neither other personality factors nor the motivational distortion are significantly correlated with TAPC.

The Motivation and Confidence in Tests (MCT), the second factor of the TTM questionnaire, correlated significantly with Extraversion and Conscientiousness, and these correlations are as hypothesized, although the size of the correlations is low. An explanation of the relation between Extraversion and MCT could be that the extraverted person is assertive and self-confident, and thus this individual could see the taking of the test as a challenge and an opportunity to discover more about him or herself. In the case of Conscientiousness, the result appears consistent with the finding obtained by Dollinger and Orf (1991). These authors found that the highly conscientious students show high scholastic performance.

As a whole, the results of the student sample show that the personality factors are relevant variables related to the attitudes to test-taking. Four of the five personality factors show significant correlations with the two facets of TTM assessed in this research. Contrary to our hypothesis, the Openness to Experience does not result in a significant personality variable to explain the test-taking motivation. Furthermore, the motivational distortion does not present any significant relationship with the two facets of the TTM.

The correlation among the variables using the sample of employees can be seen in Table 3. Like in the student sample and in accordance with the first hypothesis, in the employees the Neuroticism and Agreeableness are significantly correlated with TAPC, although for Neuroticism the size of the correlation is smaller in the em-

ployee sample than in the student sample. The explanation of these correlations can be the same as in the student sample. Therefore, as the first hypothesis stated here suggest, the individuals with a high level of Neuroticism, characterized by anxiety and difficulty to cope with situations, generalize these aspects of their personality to the test-taking situation by rejecting it. Furthermore, as a consequence of Agreeableness, the subject with a high score in this factor shows a difficulty to compete with others as it is his or her duty in a test situation.

With respect to the second factor of the TTM construct, "Motivation and Confidence in Tests (MCT)", in the employees, only Openness to Experience shows a significant correlation. These results appear consistent with previous findings in related fields, and it confirms the hypothesis 2. For example, Barrick and Mount found that Openness is a personality factor related to the performance in occupations such as managers and professionals, and Costa and McCrae (1992) suggest that Openness is a relevant factor for occupations in which a high level of initiative and creativity is needed. The positive correlation between MCT and Openness can be inter-

Table 3
Correlations between Test-Taking Motivation, Motivational Distortion and Personality Dimensions in the Employee Sample (N= 187)

	TAPC	MCT
Motivational distortion (EPI-L)	.06	-.03
Neuroticism (NEO-N)	.16*	-.02
Extraversion (NEO-E)	.02	.08
Openness to experience (NEO-O)	.07	.16*
Agreeableness (NEO-A)	.16*	.14
Conscientiousness (NEO-C)	-.08	.13

TAPC: Test Anxiety and Poor Control
MCT: Motivation and Confidence in Tests
* $p < .05$ one-tail test

preted as that the more intelligent and cultured employees show higher motivation and confidence in themselves in taking the tests, because the tests are a way of obtaining positions, status and promotion. No other variable appears related to MCT. However, from the hypothesis 2 significant correlations between MCT and extraversion and conscientiousness would also be expected, but the correlations do not reach the significance level.

Taking all these findings as a whole, it appears that in the employee sample the TTM is related to three personality factors, although the size of the correlations is low. Like in the student sample, the test-taking motivation is not related to motivational distortion in the employee sample.

To answer the third question presented in the introduction of this article, we compared the mean scores in TAPC and MCT in the two samples. The results show that the attitudes to the test-taking in students are not different from those of employees. For TAPC, the result is $F(1,330) = .11$, $p = .74$, and for MCT the result is similar, $F(1,330) = 1.29$, $p = .25$. Therefore, the labor experience of individuals does not have any effect over their test-taking motivation. Also, students and employees do not show significant differences in the personality dimensions. The F values were .9, 3.8, 3.2, 1.6, and 2.3 for Neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness, respectively (degrees of freedom = 1 and 330 for all cases).

The last findings make a grouping of the two samples in only one group adequate, and then to compute newly the correlations between personality and TTM. In the large sample (332 subjects), TAPC is correlated significantly with Neuroticism ($r = .26$, $p < .01$) and Agreeableness ($r = .16$, $p < .05$). With Respect to MCT, this facet of TTM is correlated with Conscientiousness ($r = .15$, $p < .05$) and Extraversion

($r = .12$, $p < .05$). Thus, with only one sample the findings obtained independently for the two samples are repeated. Newly, four personality factors appear associated to the test-taking motivation.

Discussion

Ability tests are one of instruments more frequently used in personnel assessment, immediately after biodata and interviews. Furthermore, as the generalization validity studies have shown, the ability test has an acceptable validity, remarkably for entry-level jobs (Hunter y Hunter, 1984; Hartigan y Wigdor, 1989). However, recent investigations have suggested that the validity of these instruments can be moderated by the motivation of the subjects for test-taking. In this respect, significant correlations were found between test-taking motivation and individual variables (Arvey et al. 1992; Schmit y Ryan, 1993; Smither et al., 1993). A priori, personality would be a variable that could explain the latter findings. However, partly due to the fact that it is a new research area, studies have still not been published on the relationship between the test attitudes and the personality characteristics of the individuals, but those studies would appear to be needed.

This article is a contribution in which the relation between the test-taking motivation and the five factor model of personality is studied. In this research TTM was conceptualized as the positive or negative attitudes of the subjects to answering tests and others instruments used in personnel assessment. Here, TTM has two independent facets. The first is a factor characterized by a negative belief about tests. According to this factor, the individuals with a high score in it show high anxiety in test situations and their control is poor for both anxiety and situations. The second facet consists of a positive

belief due to the fact that the individual sees the test as a fair, motivating and attractive procedure for making personnel decisions. For its part, personality was conceptualized using the five factor model (Digman, 1990), and the big five were assessed with the NEO-FFI (Costa and McCrae 1985, 1992). Also, this research was conducted in order to check if the labor situation of the subjects has any effects on the TTM.

The results found in this research indicate that personality, as it is conceptualized by the five factor model, is associated with a favorable or unfavorable disposition to the tests. Our findings show that the subjects more opposed to the use of the test for employment decisions are characterized by a more negative vision of the tests, high anxiety and little self-confidence, and this vision is independent of their labor situations (employee or unemployed). Therefore, it may be possible that their attitudes could be a form of defensive attribution, used by the subjects to avoid damaging their self esteem. In effect, Neuroticism is related to the facet of TTM characterized by test anxiety. Also, the subject with a negative vision of the test is a person with a high scoring in the Agreeableness factor. This subject is cooperative not competitive, submissive and taking the test is a competitive situation in which the individual must show a better performance than the other subjects enrolled in the test situation. Thus, the test-taking situation is a contradictory one to the personality of the agreeable subject.

Contrary to the fact that some individuals have a negative attitude to the tests, there are other subjects for which the tests are adequate and objective tools for decision-making in personnel selection. Moreover, for these subjects the tests are a stimulus. These subjects obtain high scores in the MCT, the second facet of TTM, and they would be characterized by extraversion,

openness to experience, and conscientiousness at work. These individuals believe that the tests are better instruments to decide if a person is adequate for a job than instruments based on subjective decisions (e.g. interviews, certain forms of assessment centers, etc.). However, this description of the positive type of test-taking motivation might be moderated by the labor situation of the subjects. In effect, openness shows significant correlation with MCT in the employee sample, but not in the student sample, and extraversion and conscientiousness show significant correlations with MCT in the student sample but they do not show this with the employee sample. These findings can be an effect of different personality characteristics in the individuals of the two samples. Nevertheless, more research on this question appears necessary in the future. For example, a study could be to compare on TTM and personality different employees samples.

Another finding of this research is that the labor experience has no effect over TTM. Employee and unemployed (student) subjects do not differ in any facets of TTM. Therefore, the attitudes to the test are beliefs affected by personality factors but not by occupational variables.

The findings obtained here have some implications for personnel assessment. Firstly, TTM can help to improve our personnel selection methods, for differentiating subjects pro and con to tests. For example, the favorable subjects could be assessed using conventional tests and similar procedures. For their part, the unfavorable subjects would be assessed using alternative procedures such as interviews, work sample tests, assessment centers, simulations, etc. Secondly, the validity studies of the employment tests could be made separately for favorable and unfavorable subjects. In this way, the effects of

TTM over test validity could be known and neutralized.

As a summary, the present research suggests that personality, as it is conceptualized by the five factor model, and test-taking motivation are, partially, related. Moreover, the personality characteristics

could explain why some people reject the tests as a way of personnel assessment.

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