ETHICAL DILEMMAS OF USING INTELLIGENCE TESTS IN PRACTICE AND RESEARCH

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Abstract. Intelligence tests, widely used both in research and in practice (education, clinical, human resources) operate psychometric distinction of the human body and all of this evaluative conduct to ethical meanings. The man begins to feel the huge stakes of intelligence tests since childhood. In some education systems, good IQ scores determine placement of children in special classes or, where appropriate, the school delay of the least endowed. Admission to prestigious universities also depends on the level of IQ. Later in adulthood, IQ can increase or decrease an individual's chance of getting a better job, a satisfactory standard of living. In research, IQ determination for large groups of people or whole nations may gain results in the public image – for those with high scores, respectively stigma and discrimination – for those with lower scores. We believe, therefore, that measuring IQ is a major issue of ethics, primarily through its impact on individual lives and secondly – because of the dangers that might result (discrimination against immigrants women and disadvantaged, prejudiced against certain races). Therefore, we propose the analysis of the most important dilemmas of using intelligence tests in research and practice and outline courses of action to avoid potential ethical slippage.

Key words: intelligence tests, ethics, negative stereotyping, stigmatization, beneficence.

Intelligence is the ability of global knowledge of the world and to overcome the challenges of life, it expresses rational thinking[1]. Etymologically, the term of intelligence derived from „intelligere" which means to relate, organize or from „interlegal" aimed at establishing relations between relations[2]. IQ tests measure intelligence, the relation between the mental and chronological age of the individual. They are often at the center of scientific controversy related to their construction itself. From these controversies arise numerous ethical dilemmas for practitioners. How relevant are the real IQ scores for the individual cognitive potential and its ability to solve everyday problems? How well designed are intelligence tests? Measure them, indeed, which should measure or have limitations and flaws? There are smart people, but can be declared as less intelligent because IQ test does not cover the type of problems they performing? How „pure" IQ scores are? Can they be contaminated by some peculiarities of the personality test? How well are translated internationally recognized intelligence tests? Are they adapted and calibrated to specific local populations? Other dilemma is targeting psychologists and psychiatrists responsible for

[1] D. Wechsler, *Intelligence defined and undefined*, American Psychologist, 1975, 30 (2), 135-139.
[2] M. Zlate, *Fundamentele psihologiei. Partea a III-a*, București, Hyperion, 1994.

the ethical use of tests of intelligence. How strong was their academic preparation in the field? How well they administrate, score and interpret tests? These specialists have received ethical guidance regarding the application of intelligence tests, the presentation of the results, issuing predictions about the characteristics of the person assessed, based on the scores? As experts weigh the evidence for or against intelligence tests that can be purchased on the market?

Finding compromise scientifically and morally if the above dilemmas can support the knowledge from the area of the latest research on intelligence tests. In a reference in the field, entitled „Death, taxes, and bad intelligence tests", Sternberg[3] argues that bad intelligence tests appear to be as inevitable as death and taxes. But on the other hand, the author notes promising developments in measuring intelligence. These developments do not require tuning conventional IQ tests, but the development of tools based on broad categories of intelligence.

Based on the requirements that should satisfy future gender psychometric instruments identified by researchers, we can deduce many of the limitations of current tests. The research in intelligence tests design should find ways to quantify success in tasks that resemble everyday reasoning, given that at present, these tests express more success in mathematics[4]. Moreover, it appears that different forms of intelligence have different effects on the strategic performance of the individual. In other words, good test have to take into account more of these forms of intelligence. For example, verbal intelligence stands to be a significant predictor for all parameters of strategic competence, while performance intelligence, the mathematics, explain only a small part of the variance in strategic competence[5].

On the other hand, there are some who say that the advent of new tests to assess emotional intelligence, tacit knowledge, practical intelligence and multiple intelligences – tools that would represent serious threats to traditional tests – would actually distract attention from legitimate intelligence theories. New tests, presented as being valid and with a smaller negative effect, would be nothing more than a „pop culture" and fails Daubert criteria of scientific evidence[6]. Strengthening the correctness of tests, eliminating test bias affecting performance, „decontamination" IQ tests of personal influences and finding new dimensions of intelligence are other courses of action in designing intelligence tests[7].

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[3] R. J. Sternberg, *Death, taxes, and bad intelligence tests,* Intelligence, 1991, 15, *3,* 257–269.

[4] Meiran, N., Fischman, E., *Categorization parameters and intelligence*, Intelligence, 1989, 13, *3*, 205–224.

[5] K., Luwel, A. Foustana et al., The role of verbal and performance intelligence in children's strategy selection and execution, Learning and Individual Differences, 2013, 24, 134-138.

[6] G. Barrett, A. Kramen, S. Lueke, Chapter 19 - *New Concepts of Intelligence: Their Practical and Legal Implications for Employee Selection*, The Scientific Study of General Intelligence, Elsevier, 2003, 411-439.

[7] J. Grand, J. Golubovich, A. Ryan, N. Schmitt, The detection and influence of problematic item content in ability tests: An examination of sensitivity review practices for personnel selection test development, Organizational Behavior and Human Decision Processes, 2003, 121, 2, 158-173.

Since all IQ tests are resolved in a predetermined time, researchers argue that some factors related to personality, namely extraversion and impulsivity, may influence the scores. It has been shown that even the intelligence involved in fast correct answers has a different structure from that involved in slow correct responses[8], for which the interpretation must take into account scores and indices of impulsivity that may affect the accuracy of solving items[9]. In addition, various items of IQ tests ask for a different speed of information processing based on the complexity[10]. Some authors argue, however, that personality would have no effect on scores on IQ tests, individual performance is dependent on the time of day the test was administered (evening better results than morning or afternoon), other authors are involved in the discovery of intelligence abilities that develop in adulthood and old age to manifest fully in[11] and others conclude that there is a lack of a satisfactory explanatory model regarding the correlations between mental speed and intelligence[12].

Using computers in intelligence testing requires ethical guidance on interpreting user and the computer based tests and in terms of report-writing programs, professional liability specialists and confidentiality[13]. Free online intelligence tests, as well as commercial ones sold on the Internet, are disavowed by the international scientific community, because of the lack of ethical responsibilities. For example, if a child's IQ, an online test, would prove disturbingly low of causes related to poor design or some failure of the test, parents can lose confidence in the child or the child himself may lose confidence in itself, without any possibility of a psychologist to provide appropriate explanations. There are also computer intelligence tests, performing licensed so-called dynamic tests of IQ, modern tools used successfully in personnel selection. The new tests are designed both to achieve a reduction in strategic change, as well to ensure an increase in scores for „disadvantaged" subjects[14]. These tests are computerized adaptive tests, performance is adjusted according to the user, giving them items that can be solved, so it will not be discouraged as a consequence of very low scores. In designing of the adaptive

[8] I. Partchev, P. De Boeck, *Can fast and slow intelligence be differentiated?*, Intelligence, 2012, 40, *1*, 23-32.
[9] L. Phillips, M. Patrick, P. Rabbit, *Impulsivity and speed-accuracy strategies in intelligence test performance*, Intelligence, 1995, 21, *1*, 13-29.
[10] P. Vernon, L. Kantor, *Reaction time correlations with intelligence test scores obtained under either timed or untimed conditions*, Intelligence, 1986, 10, 4, 315-330.
[11] D. Woodruff-Pak, *Aging and intelligence: Changing perspectives in the twentieth century*, Journal of Aging Studies, 1989, 3, 2, 91-118.
[12] L. Stankov, R. Roberts, *Mental speed is not the „basic" process of intelligence*, Personality and Individual Differences, 1997, 22, *1*, 69-84.
[13] N. Walker, C. Myrick, *Ethical considerations in the use of computers in psychological testing and assessment*, Journal of School Psychology, 1985, 23, 1, 51-57.
[14] G. Larson, D. Alderton, M. Kaupp, *Dynamic administration of a general intelligence test*, Learning and Individual Differences, 1991, 3, *2*, 123-134.

tests must be taken into account cognitive processing, auditory and visual, by subject (involving other cognitive factors than general intelligence) as well as during their implementation, variables significantly correlated with IQ[15].

Psychologists and statisticians are concerned with adapting international intelligence tests who recognize cultural and linguistic aspects of the various peoples, so they can improve cultural research methodologies and individuals to be correctly classified depending on their level of cognitive development. Adapting international Wechsler Intelligence Scale for Children, Third Edition [WISC-III], one of the most used tests to assess intelligence, the focus is, for example, on the most suitable translation to ensure semantic equivalence of items[16].

Other studies on intelligence tests aimed at building broad interdisciplinary research, neurological, psychological and mathematical statistic. According to them, the neural factor „g" for general cognitive ability, which intelligent behavior is based on can be found in the lateral prefrontal and parietal cortex, responsible with both reasoning and working memory or attention control[17]. Consequently, activation of neuro-g substrate identified should correlate with test scores[18]. Furthermore, it was demonstrated that neurophysiological processes that take place in certain regions of the brain during tasks based on spatial working memory are influenced by individual differences in intelligence[19].

Competences of psychologists and psychiatrists applying intelligence tests are also of particular importance. Developing new tests will lead to better psychological evaluation and maximization principle of beneficence only where psychologists will be able to understand the rules for the application of these tools and use them correctly. Although many international scales were adapted on populations of various countries, training of specialists is another problem. Grégoire[20] notes that the current use of intelligence tests in France and Belgium highlights the lack of academic preparation and psychometric methods in this particular field in French and Belgian universities.

Cross-cultural studies dedicated for intelligence make serious ethical issues both in the interpretation of results (likely to promote genetic superiority of peoples and create negative stereotypes about others) and in terms of media coverage of

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[15] L. Stankov, J. Crawford, *Self-confidence and performance on tests of cognitive abilities*, Intelligence, 1997, 25, *2*, 93-109.

[16] J. Fons, Van de Vijver, *Chapter 17 - Principles of Adaptation of Intelligence Tests to Other Cultures*, Culture and Children's Intelligence, Elsevier, 2003, 255-263.

[17] K. Lee, Y. Choi, et al., Neural correlates of superior intelligence: Stronger recruitment of posterior parietal cortex, NeuroImage, 2006, 29, 2, 578-586.

[18] R. Haier, R. Colom, et al., Gray matter and intelligence factors: Is there a neuro-g?, Intelligence, 2009, 37, 2, 136-144.

[19] C. Rooy, C. Stough, et al., Spatial working memory and intelligence: Biological correlates, Intelligence, 2001, 29, 4, 275-292.

[20] J. Grégoire, *Chapter 6 - France and French-Speaking Belgium*, Culture and Children's Intelligence, 2003, Elsevier, 89-108.

them. In such cases, the area of ethical responsibility is much broader, being shared between authors of gender studies, representatives of the international scientific community and journalists. We want to fix this framework since the beginning of ethical analysis because some of the findings of international studies devoted to intelligence are not only fuel theories ghost of the past, like racial hygiene.

The most recent studies dedicated to measuring races intelligence was one of Professor Richard Lynn of the University of Ulster in Northern Ireland. According to him, in Northern and Western Europe IQ is higher than in the south-east and east. According to the Irish professor race is the most important determinant of IQ, although the differences in „g" factor (general cognitive abilities, underlying intelligence) in world populations arise from combinations of genetic and environmental factors[21]. The survey also claims that American blacks have an IQ 15 points higher than blacks living in Africa (which suggests that living in a white society has greatly increased IQ of American blacks) and the Caucasian population living outside of Europe tends to an IQ slightly lower than the European average.

The results of this study were covered in most cases relatively neutral, presenting rankings as such, but there were overhanging stories – for example, „Europe with stupidity wagon" capsized in the Balkans[22] – such as creating negative stereotypes against some people (sets of undesirable traits of the members of a social group, resistant to change, despite the existence of evidence contrary to their content). The Germans and Dutch would be the most intelligent people in Europe, with an IQ of 107 points[23], followed by Poles with 106 points, with 104 points Swedes and Italians with 102 points, ranking well, ahead of the British (ranked 8 in the European hierarchy of IQ) and French, ranked 15. Romanians were reported as being at the bottom, with an IQ of 94 points, the same as the French and Bulgarians, Russians and Greeks after. The explanation offered by the media for these differences is the citation of a study that populations in the colder northern Europe have bigger brains – and therefore more developed intelligence – than residents of southern continent. A similar study[24] placed the Romanians last in Europe after the RAVEN test, one of the most rigorous and widely used tools in the world and the explanation for this was attributed to the lack of education (emigrants left their children unattended in the country, Romanian teachers are poorly motivated, there is adequate facilities in schools, people have no serious knowledge in science - 32% of Romanian are absolutely convinced that there are people possessed by the devil, 42% believe that the sun revolves around the earth and so on).

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[21] R. Lynn, *Chapter 8 - The Geography of Intelligence*, The Scientific Study of General Intelligence, 2003, Elsevier, 127-146.

[22] R. Golban, *Căruța cu proștii Europei teoretizată în presa germană*, http://www.cotidianul.ro (accesat la 1 august 2013).

[23] Euractiv, *Germanii sunt cei mai inteligenţi oameni din Europa*, http://www.euractiv.ro (accesat la 1 august 2013).

[24] Antena 3, Românii au cel mai mic IQ, suntem pe ultimul loc din Europa la capitolul inteligenţă, http://www.antena3 (accesat la 1 august 2013).

Without raising arguments about the psychometric rigor of instruments used to calibrate their translation and specific local populations, we can't fail to notice that such stories reinforce national autostigma (individually, autostigma is a concept with multiple ethical connotations, it defines an altered perception of self, the purpose of discrediting him as a member of a community[25].

Other studies that may raise ethical concerns analysis: the existence of an inverse correlation between intelligence level and number of children[26], IQ level lower in rural areas compared to urban areas[27], attempts to explain the intelligence of some people – the Jews such high intelligence and values that promote success, thus explaining their strong representation among the intellectual elite, universities and high status among social classes[28]; IQ positive influence on the health of nations as indicated by fertility rate, infant mortality rate, maternal mortality rate and deaths from HIV/AIDS and life expectancy[29]; differences in IQ between the inhabitants of the northern and southern Italy[30].

Regarding the heritability of IQ, research shows that, despite the striking genetic inheritance of intelligence, it can explain very little of the intergenerational transmission of economic status of families, assuring her followers just higher cognitive levels of educational attainment and opportunity[31]. However, the causal relationship between intelligence and national wealth, a fashionable topic in recent research, is difficult to determine, although the cognitive level of a nation is highly correlated with the level of education[32].

Hazardous extrapolation of the results of such research generates prejudices about certain categories of people or whole nations (which generated junk science of improving the race) can emphasize hereditary differences between human races, ignoring the social and cultural context in which the studied groups live. To eliminate these risks, caution should be the watchword in the dissemination and interpretation of research data.

The cultures define themselves intelligence in different ways according to their own requirements. On the other hand, there are significant variations in the types of

[25] M. Pădurariu, A. Ciobîcă, C. Persson, C. Ştefănescu, *Autostigmatizarea în psihiatrie: perspective etice şi biopsihosociale*, Rev. Română de Bioetică, 2011, 9, *1*, 16-23.
[26] G. Meisenberg, *The reproduction of intelligence*, Intelligence, 2010, 38, *2*, 220-230.
[27] V. Swami, A. Furnham, *Self-assessed intelligence: Inter-ethnic, rural–urban, and sex differences in Malaysia, Learning and Individual Differences*, 2010, 20, 1, 51-55.
[28] R. Lynn, S. Kanazawa, *How to explain high Jewish achievement: The role of intelligence and values*, Personality and Individual Differences, 2008, 44, *4*, 801-808.
[29] C. Reeve, *Expanding the g-nexus: Further evidence regarding the relations among national IQ, religiosity and national health outcomes*, Intelligence, 2009, 37, 5, 495-505.
[30] C. Cornoldi, D. Giofrè, A. Martini, *Problems in deriving Italian regional differences in intelligence from 2009 PISA data*, Intelligence, 2013, 41, 1, 25-33.
[31] S. Bowles, H. Gintis, *Economic Status, Inheritance of: Education, Class, and Genetics*, International Encyclopedia of the Social & Behavioral Sciences, 2001, 4132-4141.
[32] H. Rindermann, *Relevance of education and intelligence at the national level for the economic welfare of people*, Intelligence, 2008, 36, *2*, 127-142.

cognitive processes in the adaptation to the requirements of different cultures. For example, the Greeks and the Chinese are equal in general cognitive factor g, but the Chinese outnumber Greeks in processing visual and spatial information, thanks to the Chinese logografic[33] As it concerns African Americans and whites, according to another study, there were no racial differences in terms of solving standard problems, based on available information or on information newly learned, but there are differences in conventional IQ whose items can be solved on the basis of specific knowledge previously[34]. In other words, immigrants, the poor and poorly educated, have access to the previous specific knowledge, which would ensure a higher IQ.

An appropriate population model based on IQ should aim therefore not only at the individual level of information but also at the information in the context of the individual and society near where he lives[35]. Cultural diversity will be considered not only for reasons of social justice and ethical acceptability, but also as objective reality[36]. However, there are many voices that argue that such an ethical explanations are, in fact, reasons for maintaining social and political taboos as for stopping the progress of science. For example, Henry Garrett (1961), a president of the American Psychological Association, stated that „egalitarian dogma belief that blacks and whites are genetically equal in cognitive ability" was the „scientific hoax of the century" but nevertheless it was rooted, despite increasing evidence to the contrary[37].

Gender differences

Regarding gender differences in intelligence, a controversial study is one of the same Richard Lynn[38], whereby males have larger brains than females and this is positively correlated with intelligence. The author refutes the general opinion that there is no difference between general intelligence of both sexes, arguing that IQ adult men is 4 percentage higher than womens, men having better verbal skills and higher reasoning and more efficient spatial skills. For children up to 14 years, gender differences would be lower because girls mature earlier than boys. Another study by this author shows that young male students in Ireland have an IQ 2.6 points higher than girls. Their performance at Irish universities, examined on a

[33] A. Demetriou, Z. Kui, et all., *The architecture, dynamics, and development of mental processing: Greek, Chinese, or Universal?*, Intelligence, 2005, 33, 2, 109-141.
[34] J. Fagan, C. Holland, *Racial equality in intelligence: Predictions from a theory of intelligence as processing*, Intelligence, 2007, 35, 4, 319-334.
[35] R. Gordon, *Everyday life as an intelligence test: Effects of intelligence and intelligence context*, Intelligence, 1997, 24, 1, 203-320.
[36] J. Dumas, D. Rollock, R. Prinz, H. Hops, E. Blechman, *Cultural sensitivity: Problems and solutions in applied and preventive intervention*, Applied and Preventive Psychology, 1999, 8, *3*, 175-196.
[37] J. Rushton, *The equalitarian dogma revisited*, Intelligence, 1994, 19, *3*, 263-280.
[38] R. Lynn, *Sex differences in intelligence and brain size: A paradox resolved*, Personality and Individual Differences, 1994, 17, *2*, 257-271.

sample of 7,000 young people, showed that boys perform better and the difference in IQ could explain the difference in performance[39].

And other authors[40] find, in turn, high correlations between head size, brain volume and IQ level or find the women's preferences for intelligent men like a „genetic investment". Clever and creative men with high IQ measured by the Wechsler Adult Intelligence Scale (WAIS), are preferred by women who want instinctively establishment of „intelligent provisioning" for their future children, but in some cases women have made mistakes[41].

There are also a number of studies that the physically attractive people are more intelligent than physically unattractive. The beautiful and smart would be bias or stereotype, but this is a fact explained by psychological evolutionism. It would result in four hypotheses empirically true: intelligent men are more likely to attain higher status than less intelligent people, intelligent men are more likely to mate with beautiful women, intelligence is hereditary and beauty is hereditary[42].

Without counting the empirical studies, the limits of quantitative research mentioned are obvious, primarily because of the statistical samples investigated. Richard Lynn's study is conducted on subjects from Northern Ireland and preferences of women for intelligent men are identified in a study comprising only 209 women.

Ethical dilemmas that arise concern therefore imprudent generalizations and interpretations hazard, which can lead to the formation of negative stereotypes about women and discriminatory sexist attitudes. Some clarifications in their case studies are provided throughout the profile. According to several studies of the '90s women get better grades in college, which was due to both intelligence as a certain work ethic. The fact that their grades are not correlated with subsequent scientific achievements (it turned out that men have numerous scientific achievements in major international studies) are explained by the fact that in science there are more men than women[43].

In addition to these ethically research controversial, there is a large number of research harmless on intelligence, which only put issues informed consent of the subjects or the methodology used. These include: investigating the link between IQ and low protein intake, examining the relationship between IQ and political attitudes – attitudes encourage moderate political intelligence, most intelligent people embrace less extreme political orientations, analysis of assessments made by intelligent people –

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[39] R. Lynn, *Differences between males and females in mean IQ and university examination performance in Ireland*, Personality and Individual Differences, 1996, 20, 5, 649-652.
[40] J. Wickett, P. Vernon, D. Lee, *Relationships between factors of intelligence and brain volume*, Personality and Individual Differences, 2000, 29, *6*, 1095-1122.
[41] M. Prokosch, R, Coss, J. Scheib, S. Blozis, *Intelligence and mate choice: intelligent men are always appealing*, Evolution and Human Behavior, 2009, 30, *1*, 11-20.
[42] S. Kanazawa, J. Kovar, *Why beautiful people are more intelligent*, Intelligence, 2004; 32, *3*, 227-243.
[43] J. Mikk, K. Täht, O. Must, *Sex differences in educational attainment*, Personality and Individual Differences, 2012, 53, *2*, 132-136.

they are more reliable, more accurate compared to those of less intelligent people, the impact of food consumption on the development of intelligence – eating fish, bread and cereals is beneficial for cognitive development of children, Instead of margarine consumption was associated with poorer cognitive functioning, seafood consumption (source of omega-3) during the pregnancy of less than 340 grams per week reduced verbal IQ of children; investigating the link between childhood IQ and diseases of adult life – childhood IQ correlates with cardiovascular risk factors, especially with blood pressure IQ in childhood was inversely associated with the risk of metabolic syndrome in middle age, but the association was almost entirely mediated by level of education and social class, examining the impact of toxins on the level of intelligence – lead in the blood causes IQ loss with all the ensuing social consequences.

The use of IQ tests in school and personnel selection

IQ tests were invented as a practical necessity: the development of tools that will detect children with normal intellect, to be included in mainstream education. The first test, completed in 1905, was called Binet-Simon scale metric and marked the beginning of a large-scale intelligence testing, so selection for school and for providing predictions of their performance in adult life, to assess mental retardation and learning difficulties or for admission to prestigious colleges. Some ethical dilemmas generated by IQ tests in the education system include: the ability to make bad decisions about a child whose IQ is in full development, relevance scores for real cognitive potential of children, the poor predictive power of the results of subsequent academic achievement tests, communicating results to parents (recommended communication scores for each form of intelligence, namely verbal, figural and numeric, not a total IQ score) and, not least, blocking access to some specializations due to IQ below accepted standards. Functional brain anatomy studies revealed that IQ increasing on children is an ongoing process. Brain development predicts 53% modifications in performance IQ and 14% change in verbal IQ and this finding must take into account in educational psychological assessment[44]. However, the ability to read improves verbal IQ in adolescence, the reverse is true for those who read less[45].

There, on the other hand, live ethical controversy about the advantages and disadvantages of using intelligence tests in schools. Benefits include IQ hierarchies strong stabilized over time, regardless of the career of individuals. Measured over half a century, IQ has shown that people have maintained the same positions in the hierarchy scores, relative to peers tested in childhood[46]. Another advantage is related to identifying students with learning disabilities[47] and communication deficits, depending

[44] C. Price, S. Ramsden, et al., *Predicting IQ change from brain structure: A cross-validation study*, Developmental Cognitive Neuroscience, 2013, *5*, 172-184.
[45] S. Ramsden, F. Richardson, et al., *The influence of reading ability on subsequent changes in verbal IQ in the teenage years, Developmental Cognitive Neuroscience*, 2013, 6, 30-39.
[46] S. Dauphinais, R. Bradley, *IQ change and occupational level: A longitudinal study with Third Harvard Growth Study participants*, Journal of Vocational Behavior, 1979, 15, 3, 367-375.
[47] M. Burns, S. Jacob, A. Wagner, *Ethical and legal issues associated with using response-to-intervention to assess learning disabilities*, Journal of School Psychology, 2008, 46, 3, 263-279.

on their verbal IQ, but assessment should be conducted properly and with appropriate questionnaires by trained practitioners. Among the disadvantages are inventoried limits of samples and their poor predictive power. The tests to be applied depending on the level of the development of children. In the case of Raven Progressive Matrices, for example, the shape of puzzle led to higher scores than the shape of the image, the class II compared with grade IV[48] It should also be understood that the relationship between intelligence and academic achievement is moderate and other psychological variables such as attention[49]or level of aspiration[50], which is why college admission made on the basis of psychological testing should include such factors. Graduate Management Admission Test (GMAT), an instrument widely used for admission to MBA programs for managers can predict very little from next academic performance of candidates, which is why were included other skills in the admission programs for improve their predictive value and legitimacy[51]. Another criticism of the application of intelligence tests in schools was that, despite the potential merit, it excuse, in fact, unequal educational outcomes that are considered normal and objectives in light of the differences in IQ[52].

In human resources, ethical dilemmas raised by the application of intelligence tests may be partially solved if one starts from the evidence that these tools are not sufficient to place the "right man in the right place." It is true that IQ represents an objective measure of cognitive ability of a person (in this respect, most intelligent will always occupy jobs with more complexity) and the efficient allocation of talents and intelligences in the economic success of a company depends on that society[53]. But it is equally true that intelligence is not the only factor responsible for the work performance of employees. Conscientiousness and emotional stability are predictors of job performance for all jobs, and good companionship and extraversion/sociability (implying flexibility and cooperation) can predict job performance in the jobs involving interpersonal factors[54]. Also, a simple IQ profile is not enough to select candidates for high responsibility jobs, cognitive profile of managers of multinational

[48] J. Carlson, K. Wiedl, *Toward a differential testing approach: Testing-the-limits employing the Raven matrices*, Intelligence, 1979, 3, 4, 323-344.
[49] R. Steinmayr, M. Ziegler, B. Träuble, *Do intelligence and sustained attention interact in predicting academic achievement?*, Learning and Individual Differences, 2010, 20, *1*, 14-18.
[50] R. Lynn, S. Hampson, M. Magee, *Determinants of educational achievement at 16+: Intelligence, personality, home background and school*, Personality and Individual Differences, 1983, 4, 5, 473-481.
[51] J. Hedlund, J. Wilt, K. Nebel, S. Ashford, R. Sternberg, *Assessing practical intelligence in business school admissions: A supplement to the graduate management admissions test*, Learning and Individual Differences, 2006, 16, *2*, 101-127.
[52] T. Richardson, E. Johanningmeier, *Intelligence testing: the legitimation of a meritocratic educational science*, International Journal of Educational Research, 1998, 27, *8*, 699-714.
[53] T. Strenze, *Allocation of talent in society and its effect on economic development*, Intelligence, 2013, 41, *3*, 193-202.
[54] P. Touzé, *Personality and prediction of performance in the workplace. Le travail humain*, 2005, 68, *1*, 37-50.

companies have based only on traditional intelligence, but also in other subtypes of intelligence – emotional, political, cultural, social, organizational, inter-related, innovative and intuitive[55].

Some ethical precautions that must be taken into account in the selection of personnel aimed at civil law of nondiscrimination in employment. Therefore, psychologist applying IQ tests should be concerned by objective standards of recruitment, to consider the individual merits of the individual, to ensure equal opportunities for all candidates[56]. Social and legal consequences of the application of these tests in organizations, arising from labor legislation must also be known. In light of many studies, the application of cognitive tests in organizations is a controversial issue, both in terms of social and legal consequences of administering these tests and in terms of their predictive power. The authors use a survey of American psychologists and shows that 90% of people like the idea that cognitive skills are necessary to appreciate the multidimensional nature of human performance, but are not sufficient to understand „chains" behavior involved in job performance. In other words, these tests have validity and provide information – but no complete information – because various jobs requires specific skills[57].

Measuring intelligence in psychiatric clinic

The use of intelligence tests in the psychiatric clinic generates, in turn, a number of ethical dilemmas related primarily to the relationship between beneficence and not harming and secondly - the treatment and care of mental retardation. Regarding beneficence, we must mention that intelligence tests used to assess cognitive function and the decline in IQ in people with schizophrenia, with dependencies with various personality disorders, ADHD, bipolar disorders, etc. In interpreting the results, psychiatrist and clinical psychologist must take into account certain findings of international studies of gender. Thus, cognitive impairment in schizophrenia may be 10 IQ points (criterion decline) deeper performance tasks and verbal tasks moderate despite large gaps verbal episodic memory in all psychotic patients[58]. To measure this damage, however, is essential to determine premorbid IQ or IQ of periods of remission of the disorder, as studies have shown that cognitive decline is lower in patients with higher premorbid IQ (performance tests can be attributed to low IQ and a premorbid low level). Also, bear in mind that among schizophrenic patients there is always a high-functioning group with preserved intellectual ability, although cognitive

[55] M. Harvey, M. Novicevic, T. Kiessling, *Development of multiple IQ maps for use in the selection of inpatriate managers: a practical theory*, International Journal of Intercultural Relations, 2002, 26, *5*, 493-524.
[56] J. Sharf, *Litigating personnel measurement policy*, Journal of Vocational Behavior, 1988, 33, *3*, 235-271.
[57] K. Murphy, B. Cronin, P. Tam, *Controversy and Consensus Regarding the Use of Cognitive Ability Testing in Organizations*, Journal of Applied Psychology, 2003, 88, *4*, 660-671.
[58] J. O'Connor, B. Wiffen, *et al.*, *Is deterioration of IQ a feature of first episode psychosis and how can we measure it?*, Schizophrenia Research, 2012, 137, *1–3*, 104-109.

processing speed is reduced in all patients[59] and cognitive deficits among bipolar patients are heterogeneous[60].

Computerized intelligence test items can be used in the clinics as a preventive treatment for patients at risk for schizophrenia or to unlock the potential of rehabilitation for those in first-episode psychosis[61]. Also the psychologist must be sensitive to other findings scientifically. For example, one aspect of IQ, such as inductive reasoning could be compromised schizotypal disorders[62]. However, in child psychiatry ADHD demonstrated that specificity can be determined according to the areas of IQ, verbal intelligence specifically sets a high correlation with high levels of externalizing behavior in boys aged 6-12 years[63] and the possibility that internet addiction cause cognitive problems in adolescents could not be excluded[64].

Regarding ethics mental retardation, the emphasis is on the relationship with caregivers – They should be advised that the person concerned has biological capacities and changed behaviors that all efforts should be directed towards protection and assistance programs[65] and the diagnosis itself, given the risk that a person with an IQ acceptable, but unable to cope with everyday life circumstances (some cases of autism) to be excluded from programs assistance. Finally, ethical clinician's responsibility to choose the most suitable instrument for assessing intelligence, given that the factors measured by IQ tests and they all multiply. Thus, clinical test batteries should be smaller to assess general cognitive ability[66] and the information provided to supplement the practical test with non-standardized psychometric tests to compensate for rigidity.

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Conclusions

Many ethical dilemmas that arise in the use of intelligence tests remain an open issue, as long as science generates new psychometric instruments. In all cases the administration of such tests, the ethical responsibility of psychologists and psychiatrists belongs to which they apply. We believe, therefore, that the solutions of conscience which they adopt in research, clinic, school or organization when working with IQ tests should be based not only on the knowledge provided by a solid grounding in psychometric assessment but also making use of the results of new research in the field of intelligence, showing sensitivity in evaluation and respecting ethical and legal standards. If practitioners take account of these courses of action, reassessment of ethical principles in order to adapt to new innovations in the field, will be much less problematic.