

Test of Human Figure Drawing: Drawing Bizarreness and its Relation to some Parameters of Personality

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Abstract: The aim was to verify the potential of holistic approaches towards the evaluation of human figure drawing. Groht-Marnat, Tharinger, Stark favour this approach, and findings seem to legitimize considerations about its diagnostic productivity. Yama, Dans-Lopez and Tarroja have identified bizarre and artistic quality criteria for drawing that have a relevant interpretative meaning.

Within the study involving 525 normal adult subjects, the hypothesis of differences in personality traits and performance level produced by authors of selected types of drawings, was verified. The criterium of bizarre drawing proved to be an important indicator of intellectual abilities monitored by subtests of the ISA-S test, the non-verbal CF 2A test, Decision-making test. They achieved the lowest scores in all parameters, with significance in relation to more detailed drawings. Results from IHAVEZ and DOPEN questionnaires suggest that bizarre character producers are more emotionally instable, less emotionally resilient, less anticipating, and less self-controlling, less rational, responding more intensely to problems and are less orientated towards their solution. They are more neurotic and present more psychotic experience.

The main limitation is the chosen approach. Holistically evaluated drawing is rare in terms of its occurrence in a normal population. Even within the files involving several hundred participants, it is possible to clearly classify drawing in the maximum number of tens. Diversity of the terminology and methodological ambiguity constitutes another limitation. The bizarreness itself is not interpreted clearly, rather the contrary.

Keywords: *test of human figure drawing; bizarreness of drawing; intellectual abilities; personality; drawing assessment system; holistic approach.*

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1. Introduction

In 2015 we published a study based on data acquired from 1916 adult subjects which aim was to acquire proofs on empiric validity of drawings qualitative assessment based on a type of a drawing. Results of the study were very weak, with the exception of findings on some differences in personal parameters in the case of producers of small and big figures (Fabry, 2015). It could be discussed on the concept of the survey i.e. comparison of a completely different type of drawings (e.g. nude versus dressed figures), though, it is indisputable that the important limit of the work was a fact that results in the study have been acquired according to the processing of values of some standardized methods (data collection ex post from real examinations, rough score was not at a disposal). We also consider as restricting - from the point of data use in research - their acquisition in real situation during test (selection procedure) what is, if separately perceived, very positive and in principle requested, but some acquired values of "evidence" methods (personal questionnaires) seemed as noticeably influenced by an effort to be successful in a selection (Fabry, 2015). This handicap in such situation could not be eliminated even by the use of score Lie value (participants in fact generally try to present themselves as balanced personalities without noticeable personal deviations). During the last years we have acquired analogical data from examinations (also with rough score) and that is why we present the study that would confirm or disprove sceptical conclusions of previous research.

Efforts to acquire proof on empiric validity of human figure drawing test and simultaneously everlasting controversies between its users and critics are evident facts that are connected to the test. The test is uncompromisingly criticized in an authoritative and widely quoted study by Motta and co-authors (Motta et al., 1993) who label the test as invalid and ineffective instrument. They consider popular attitude towards test as a complementary tool of examination that is also typical for practitioners from clinics as attitude that contradicts elementary logic. According to the abovementioned authors it could not be used less valid method to support validity of more valid instruments (Motta et al., 1993). Lilienfeld et al. (2000) are also important opponents to projective tests. Piotrowski (2015), in the opposite, challenges critics to present their reservations on "hard" data, though, he himself quotes only one study of Yama (1990) that presented the proof on empiric validity of test. "Publication silence" on experience with the test of adult population that is characteristic for the Czech republic and the Slovak republic is unacceptable, because the test had been widely used

and not only in our country but in the whole world (Piotrowski, 2015). Newer publication of Vagnerova (2017) is explicitly aimed at drawings of children and sporadically appearing studies or conference papers are aimed more at experience with psychiatric patients. Relevant researches of Czech and Slovak authors (Badosek, 2011, 2013) and Demuthova (2010) did not present positive findings on test validity when verifying interpretation of Machoverova (1953). Altman (2011) is seriously devoted to these problems but he avoids considerations on test validity what is understandable because of author's position. Test popularity in the world is high - despite really controversial findings what is documented not only in abovementioned Piotrowski study (2015). The author has analyzed literary data from the period 1995-2015 and found out that even criticism of the method that points out on lack of psychometric qualities of the test did not prevent its wide use when assessing mental health. The test has been also used in less traditional fields (beyond clinical area) e.g. there were published cross-cultural works of Binson with co-authors on differences in drawing of oneself by Israeli and Thai adolescents (Binson et al., 2019) and work of Gigi (2016) aimed at an influence of cognitive style (visual and verbal style) on quantity of details in a drawing. The test, of course, is being used as a traditional clinical tool, from newer works we present Maserati study (Maserati et al. 2018). It still continues the original effort (inspired by Goodenough, 1926) to probe intellectual powers with the help of figure drawing. Test in this sense has been usually used for children (Harris, 1963; Koppitz, 1968; Naglieri, 1988; Sturma & Vagnerova 1982) but it seems that there is some perspective for use of some studies that are trying to identify potential of human figure drawing when finding out intellectual ability (cognitive abilities) of adult participants, mostly in context with various damage e.g. study of Mitchell et al. (1993), with patients with cognitive damage; Strumfer (1963) was dedicated to patients with psychotic disease; Wang et al. (1998) used figure drawing for screening identification of dementia in older people; Maserati et al. (2018) compared drawings of patients with Alzheimer dementia. There also exist "attempts" to apply test as intellect indicator for "healthy population", e.g. Imuta et al. (2013) or Reynolds & Hickman (2004), while their assessment system of intellectual abilities is useful up to the age of 89.9 years.

2. Problem

Despite the fact the test has been intensively used especially by psychologists - practitioners, its usefulness (e.g. Motta et al., 1993), as well as heterogeneity of systems assessment, remains controversial. Signing of

individual characteristics of a drawing is nowadays obsolete (e.g. Acton, 1995; Groth-Marnat & Roberts 1998; Joy, 2013, Lielenfeld et al. 2000; Tharinger & Stark, 1990) but some prospect is given to global qualitative or quantitative score systems. Indisputable problem of global score applications are contradictory results of studies, e.g. Yama (1990) acquired correlations of qualitative, holistic evaluation through exact criterion but he did not obtain correlations between this criterion and global quantitative index derived from popular score system of emotional indexes of Koppitz drawing. Unconvincing results that have been acquired with the use of Koppitz scoring system are also presented by Velez-van Meerbeke with co-authors (Velez-van Meerbeke et al., 2011). The situation is also complicated by application of various assessment systems that are different. Less important (but still very significant) problem of created systems of drawings assessment is frequent “mixing” of unambiguously quantifiable individual features of drawing with global measures, usually qualitative, that try to quantify these systems (it is essential for final numerical statement i.e. score). For example Acton (1995) in his proposed evaluation system of drawings aimed to differentiate specific constructs of psychopathology, presents besides simple parameters (e.g. measurements of head) also criterion of figure bizarreness that he is trying to quantify, while assessment by points (0,1,2) of such global qualitative characteristics becomes in fact unimportant in the total sum of large number of parameters. Similarly, Dans-Lopez and Tarroja (2010) use in their analysis of drawings specific characteristics, such as “absence of pupils” together with global indicators - “bizarre drawing” or “primitive appearance, look”. Groth-Marnat and Roberts (1998) used unpublished assessment scheme (Morena, 1981; Groth-Marnat & Roberts, 1998) based on quantification (scale 1 - 5) of ten characteristics of drawing that considerably differs from e.g. Koppitz scoring system or Acton system. Evaluated parameters often have qualitative character (“strong” appearance of figure, sincerity, openness of figure etc.), while assessment needs some experience and specific preparation, so that assessments of evaluators would not be extremely different (in survey there were three evaluators). Authors were able to obtain only low values of significance (in relation to data of questionnaires e.g. self-respect) and only in two characteristics of ten - “strong” appearance and “moderate” size of figure. They recommend to assess drawings in holistic, impressionist way and not to apply simple quantifications of characteristics. They, though, avoid comprehensive determination of weirdness through characteristics and favour qualitative attitude of Tharinger and Stark (1990).

It is a real problem to acquire unambiguous and simultaneously significant parameter of drawing to identify personal and/or cognitive differences, especially in the case of the so called normal population sample, as substantial part of the research is aimed at the so called “clinical” population. Situation is complicated (as abovementioned) as a result of existence of large number mutually different classification schemes and as it is unclear which characteristics of drawing or way of drawing was made reflect character of personality and intellectual powers. For example by Goodenough (1926) a child draw one drawing of an adult and it was assessed number of details and accuracy of their position.

In the version of Goodenough-Harris (Harris, 1963) children draw three figures (man, woman and themselves) and its assessment was extended also on complete drawing elaboration. Naglieri (1988) in his “Draw a Person: Quantitative Scoring System (DAP:QSS)” also used three figures for assessment. Reynolds and Hickman (2004) assess not only presence of a feature but also its quality and location on a figure of oneself, with application of up to 23 criteria (they though, do not assess quality of drawing as a whole). Our research published in 2015 (Fabry, 2015) indicated that parameters that significantly indicate some parameters of personality could be a global parameter - weirdness of drawing and also exact parameter - drawing size. If we want to think seriously of drawing weirdness as an important indicator of personal characteristics and intellectual ability of an individual, it still remains a problem how to specify unified definition of weirdness, so that studies that are being made could bring valid proof and confirm this supposition.

3. Methods, participants

Group consisted of 525 participants - 172 women and 353 men, in age from 19 up to 60, the average age was 32.4 years (SD 7.9, median 31, Figure 4). Men represented 67.2 % of sample, women 32.8 %. 43.8 % of participants have secondary education, 56.2 % have academic education (Table 1).

Table 1 Characteristics of the whole research sample

Sex	N	%	Average age	Secondary education	Academic education
Men	353	67,2	31,6	160	193
Women	172	32,8	34,2	70	102
Σ	525	100	32,4	231	294

Participants in period 2016-2019 took part in real selective procedures in various working positions in armed forces of the Slovak republic. There were collected drawings of human figures (Figure Drawing Test FDT in the sense of instructions presented by Altman, 2011, p. 22), rough score of personal questionnaires I HAVEZ* and DOPEN*, together with results of intellectual tests CF2A*, ISA-S* and the test “Decision making under time pressure” *. These methods have been stable a part of psychodiagnostic examination. Participants were informed and they gave their consent that results of the tests could be used in anonymous way for research.

In harmony with basic strategy of qualitative, holistic attitude to drawings assessment there were made mutually unmistakable and strictly different groups of drawings (in the sense of figure depiction and/or drawing characteristics). Condition to establish a group we set, because of lower number of basic group of participants (n=525) compared to survey in the past (Fabry, 2015: basic group n = 1916, participants number in the group n=25), on n = 10.

3.1. Drawing sample

Because of ambitious selected criteria (number of drawings in a group, unambiguous character of a drawing etc.) it was possible to include into the survey three groups of drawings (according to categorization and consensus of three psychologists) that could be mutually strictly distinguished and/or are mutually different in content and character of drawing. Other types of drawing such “contour figure“ and “nude figure without genitals“ were not included into the survey (e.g. we have acquired only three drawings of “nude figure without genitals“). The following types of drawings became a part of the survey:

a) “Figure in formal clothes“ n=11 (Figure 1)

These drawings are well elaborated, proportional and with many details and accessories, with figures especially in formal clothes. Men have on suit with a tie, jacket, there are depicted pockets, handkerchiefs in breast pockets, belts, buttons, possibly hat, briefcase, umbrella. Quite commonly it is depicted central line. Women are usually depicted in formal dress, skirt suit with necklace, earrings, handbag, formal shoes. Drawings look “mature“, they include many details, have basic features (eyes, hair, nose), details are of adequate size and balanced. They are similar to drawings in fashion magazines with elements of perfect dressmaking and look care. We can see there various types of shading and hatching to emphasize artistic impression.

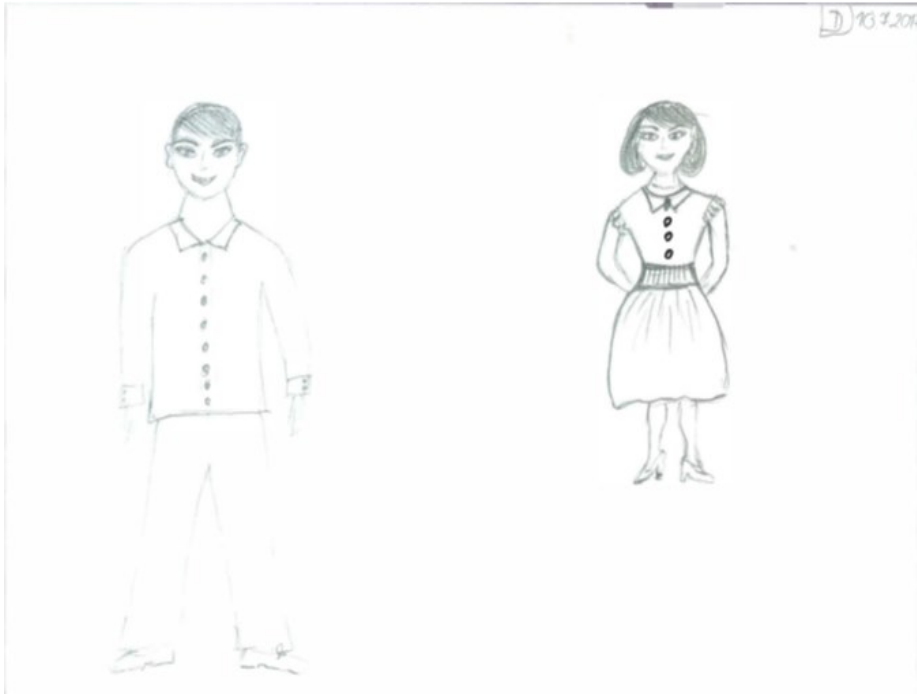


Figure 1. Figure in formal clothes
(Picture taken during selection process realized by authors in 2019 in Bratislava)

b) “Bizarre figure“ n=14 (Figure 2)

Drawing is composed illogically it is unrealistic, with poor image and/or improper connection of body parts, even senselessly disproportional. Individual parts are overdesigned or omitted, possibly depicted by various atypical forms, but there is evident effort to depict detail of figures, even if it is often meaningless. It could be seen also only rough outlines of figures, with improper disposal of individual details. Often it could be seen transparency, bigger number of fingers, waved hands.

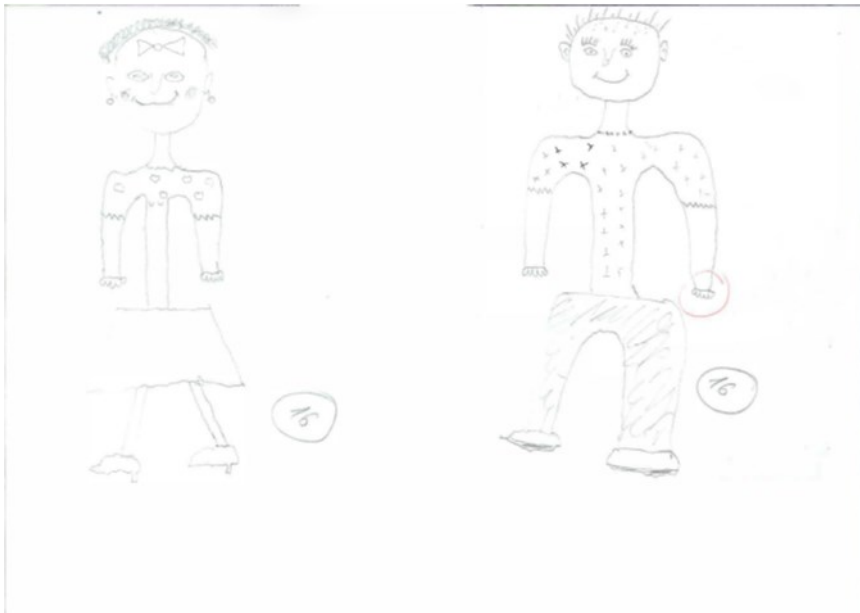


Figure 2. Bizzare figure

(Picture taken during selection process realized by authors in 2019 in Bratislava)

c) *“Nude figure with genitals“*, $n=10$, (Figure 3).

From the theoretical point of view we perceive this drawing as some contradiction to figures in formal clothes. Figures are completely naked without any clothes, with visible and often accented sex features. Figures have elaborated head and face area, drawing has good quality with depiction of details. Generally drawings look mature (they have depicted mouth, eyes, nose, hair, breast, possibly also outlined places of joints and body hair). Often could be seen figures of athletes with depicted muscles (as sportsmen, swimmers, bodybuilders), as well as with secondary sex features. We can also see here various hatching and shading to emphasize individual parts of body.

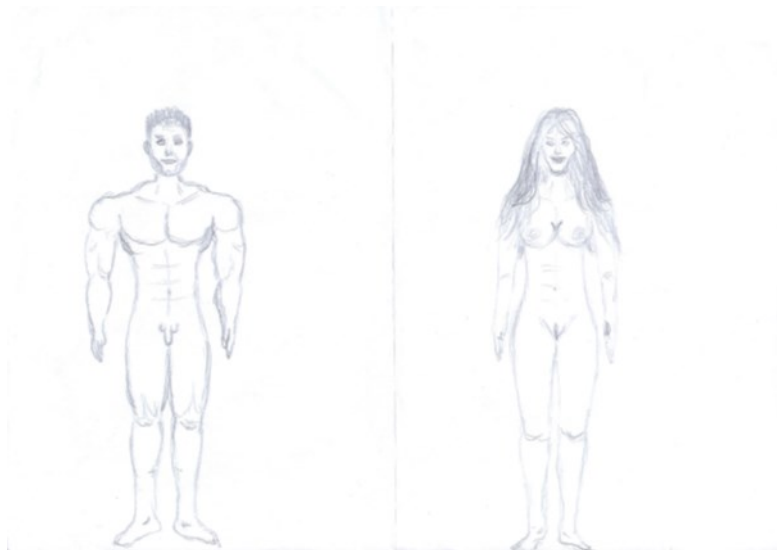


Figure 3. Nude figure with genitals

(Picture taken during selection process realized by authors in 2019 in Bratislava)

According to productivity of criterion “Extreme size of drawing” (Fabry 2015) we included into the survey also groups of drawings with extreme small and extreme big size.

d) “Extremely small figure” n=24 and “Extremely big figure” n=11.

These groups of drawings correspond with extreme size of a drawing (Fabry & Jurovaty, 2013). Height of a small figure was not bigger than 6.2 cm (there were some very small figures - height 2.2 cm) while into this group were included drawings without regard to possible qualitative differences in drawing elaboration. Extremely big figures were at least 19.4 cm high.

3.2. Instruments

A) DOPEN (Ruisel & Mullner, 1991) - original Slovak test of personality that is based on Eysenck theory. It measures psychosis, neuroticism, extroversion-introversion and also include lie scale.

B) IHAVEZ (Miksik, 1991) - original test of personality from the Czech republic that includes 14 basic and 23 supplementary scales. Basis of personality consists of 4 factors - cognition, emotionality, regulation and adaptability.

C) Decision making under time pressure (Komarova, 1993) - output test that identifies flexibility of thinking processes, speed of decision

making under time pressure but also ability to concentrate, awareness, perception, differentiation and resistance against perturbative influences.

D) ISA-S (Fay et al., 2001) - test of structure of general intellectual abilities including 9 factors. The test is aimed at intelligence functions connected with speech and calculation, to measure figural imagination and observational abilities.

E) CF 2A (Cattell & Cattell, 1970) - Cattell questionnaire including factor of general, the so called fluid intelligence with the high share of heredity and present especially in outputs that suppose adaptation to new situations.

Concentration on the three abovementioned groups of drawings was conditioned especially by their unmistakable character, their mutual extreme difference that could be theoretically a source of significant differences in level of cognitive abilities and personal profile of producers of individual types of drawing. Equally in the case of differences in drawing size, especially of extreme size it is legitimate to suppose that authors of these drawings (big vs small) could differentiate in personal and intellectual parameters.

For processing primary data on survey file we have used representations by tables. To compare qualitative features according to the feature of subgroups “type of figure” we have used non-parametric Kruskal-Wallis test which pointed out on significant differences in some factors because of small number of participants included into individual groups ($n < 30$). Statistical differences that were found for individual factors have been examined post hoc by Mann-Whitney U test for two independent variables with traditionally specified significance level $p < 0.05$ and/or with modified significance according to the number of comparisons (Bonferroni correction, specified effect rate: big Cohen $d \geq 0.8$, medium $d \geq 0.5$, and low $d \geq 0.2$).

4. Results and discussion

“Material” processing has brought more promising results than older survey (Fabry, 2015), though, not unambiguously. Especially it has not been confirmed expectations that would confirm important personal differences between drawing producers of small and big figures. We have not found out any significant differences between the two groups in factors of IHAVEZ questionnaire. Because of that there were not confirmed older findings on adaptability and submissiveness compared to the group with big figures. In previous survey there were found significant differences in regulatory adjustment variability (IHAVEZ RA). Registered RA values are in the group

of producers of extremely big figures lower (HS=9 compared to HS=10) what is in congruence with findings in the past (Fabry 2015) but differences are insufficient for us to state that they are statistically important. We incline to the opinion that qualitative diversity of figures in groups with extreme dimensions could significantly interfere with this criterion (figure dimension) and finally bring less demonstrable results. It must be said that we have not acquired any opposing results and there exists some dividing trend in personality of producer of small and big figure what was confirmed by both surveys. For authors of big figures it is more characteristic bigger autonomy, reduced adaptability and reduced behaviour control (compared to group with small figures). Significant differences in personality structure of producers of small and big figures were not proved also in DOPEN questionnaire. Here authors of small figures reached higher score in lie scale (HS=8.5 compared to HS=5) so they appear as more stylizing what is probably related to their higher rate of behaviour control and adaptability compared to authors of extremely big figures - in both questionnaires authors of small figures reached higher HS in scales relate to higher emotional lability and neurosis (IHAVEZ EM = 5.1 TO 4.1 AND OPEN N = 4.6 TO 2.8).

It seems better to focus on authors of bizarre drawings. We have found important differences in psychosis factor (DOPEN P) between authors of bizarre and extremely big drawings ($Z = - 2.92$, $r = - 0.58481$, with high degree of effect). Authors of bizarre drawings, compared to other groups, reached the highest score in abovementioned scale (HS=2.3) but statistically it is not important. In this sense the criterion of weirdness seems "interesting" when assessing psychosis. Authors of bizarre figures also reached the highest score in neurosis factor (DOPEN N. HS=7.5) and compared to authors of formal suits ($Z = - 2.64$, $r = - 0.53$, with high degree of effect) and nude figures ($Z = - 2.74$, $r = - 0.56$) they are statistically important. Authors of bizarre figures prove higher degree of possible neurotic and psychotic experience compared to members of other groups. It is quite interesting that authors of bizarre drawings reached (even if not significantly) the lowest rough score (HS=4.7) in factor of lie scale in DOPEN (L) questionnaire - they seem as honest and not stylizing. Authors of figures in formal clothes - in the opposite - reached the highest lie score (HS=9.1). We are persuaded that persons that take part in the selection process and present themselves by figure drawing that does not meet elementary criteria of human body depiction, often with senselessly atypical details, are stylized in minimal way also in other tests including questionnaires. And in the opposite, stylized, well elaborated drawings (that are to make an impression) were probably done by authors that more

noticeably stylize themselves also in other questionnaires. We want to underline that group consists exclusively of individuals with healthy psychic that usually have their professional career and adequate education. It should be mentioned, because of abovementioned, rough score that achieved authors of bizarre drawings in IHAVEZ questionnaire. They achieved the highest score in factor of emotional variability (EM - going through tension, excitableness, HS = 7.4) but also in RE factor (reactive variability - low self-control, poor consideration of consequences, lower autoregulation, HS=6.8), ER (emotional regulation variability, HS= 5.2), that is in correspondence with highest score on factor neurosis (DOPEN N, HS=7.5) in DOPEN questionnaire. It has appeared that seven questions of fourteen that support IHAVEZ RA factor could have a relation to neurotic experience. Four questions could evoke various internal fears (from future, from social scandal etc.). Example of such a question is the question No. 112 in IHAVEZ test: "Man usually seriously suffers because of his ill-considered action and that is why everyone always must in time everything think over". DOPEN test question No. 27 that supports DOPEN N "Do you worry about horrible events that could happen?" is of a similar kind. This consideration is a speculation and currently does not stand as an argument, but it represents possible explanation of higher IHAVEZ RA and higher DOPEN N by producers of bizarre figures.

Mutual comparison of other groups brought "substantial findings" when speaking about personal factors. The only significant difference was shown on the factor of regulatory adjustable variability (IHAVEZ RA. $Z = -2.61$, $r=0.56$ with strong effect) between those who draw figures in formal suit and extremely big figures. Authors of figures with formal clothes (when comparing their rough score that is among all groups the highest HS = 11.5) are perceived as the most principled, strong-minded while controlling their activities and ambitiously motivated when entering real life they show most stability in their behaviour. On the other hand, authors of extremely big figures have lower control of their behaviour compared to abovementioned authors.

Presence of nude figures in selection process is not so rare. In more complex consideration we hypothetically perceive drawing of a nude figure during examination as a big effort to meet the requirement to draw a figure and fulfill the requirement of examination which part could also be a willingness to share their intimacy - figures have not only well portrayed and illustrated face but also testifying, in detail presented body. Interpretations of clinic employees speak about some "escape" of an author of such a drawing. When identifying differences between persons who draw figures in clothes we would await because of noticeably different interpretation differences but

they were identified neither in IHAVEZ nor in DOPEN questionnaire. Though, we have to present that authors of nude figures, compared to other groups (if we take into consideration rough score), have the lowest aspirations, self-image, internal integration and optimism (EA factor of IHAVEZ questionnaire, HS=10.7). Such personal state of mind could lead to maximal effort to meet requirements and draw also things that are avoided by other persons. In this way an "escape"(low score in IHAVEZ RA, HS=24.35) would correspond with depiction of sex organs of figures what is an acceptable explanation. Of course it is unclear how this consideration would stand if compared to RA factor IHAVEZ by producers of nude figures. But the idea of "free" attitude to a drawing by drawers of nude figures is attractive. Their lowest score in KA factor (HS=8.3) supposes identification of retreated, conventional behaviour, it is evidently oriented to ambitiousness of an individual, his ambitions, effort to assert in surroundings. From this point of view, persons that draw nude figures are less ambitious and less aspiring, compared to the group of persons drawing more detailed pictures of well-dressed persons (highest HS=10.4). According to this result we can also speculate on their "more conventional" behaviour i.e. not to express their aspirations explicitly. Lower value of regulatory adjustable variability factor IHAVEZ RA reached by persons that draw nude figure is in congruence with the abovementioned results. Persons that draw nude figure are less ambitious (they express less ambitions to apply their visions) they are more unstable, possibly more impulsive. This statement is also supported by the highest value of personal extremity IHSVEZ EX (HS=4.9) of these persons. We could read Higher EX as bigger passivity and lower assertiveness of these persons compared to the group of persons who draw figures in formal clothes.

In analysis of mentioned groups of figures the criterion of bizarre figure in relation to intelligence tests proved to be more significantly promising. Even in the past it was confirmed presented negative relation of bizarre figures to some output tests (Fabry & Jurovaty, 2011). Results clearly document high sensibility of the criterion drawing weirdness to intellectual performance of a recipient. Producers of bizarre figure in almost every subtest and also in total score of the test ISA-S (Figure 4) as well as in the test CF2A (Figure 5) and in the test Decision-making (number of correct solutions) (Figure 6) reached clearly the worst results in rough score compared to creators of other four groups of drawings. The biggest important differences were between authors of bizarre drawings and those who made nude figures.

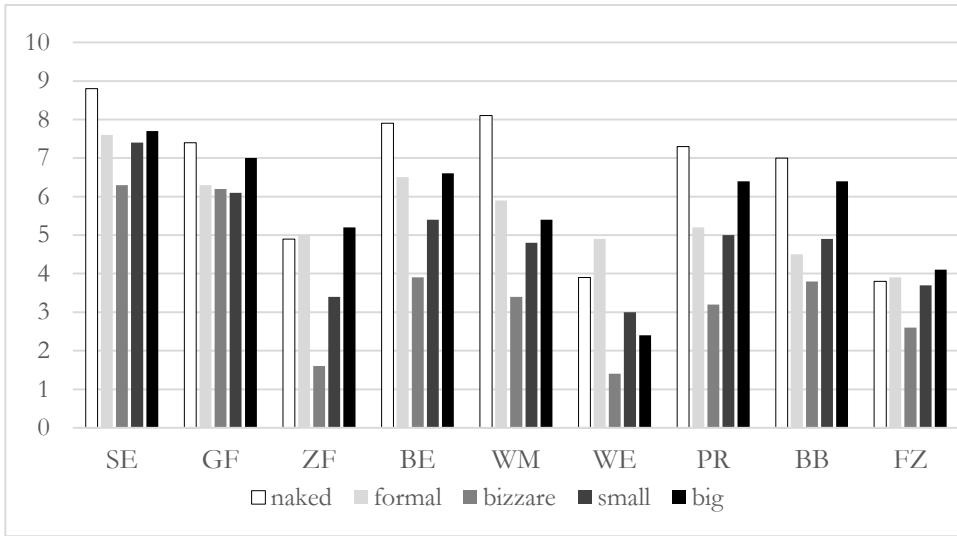


Figure 4. Raw score in the subtests of the ISA-S test

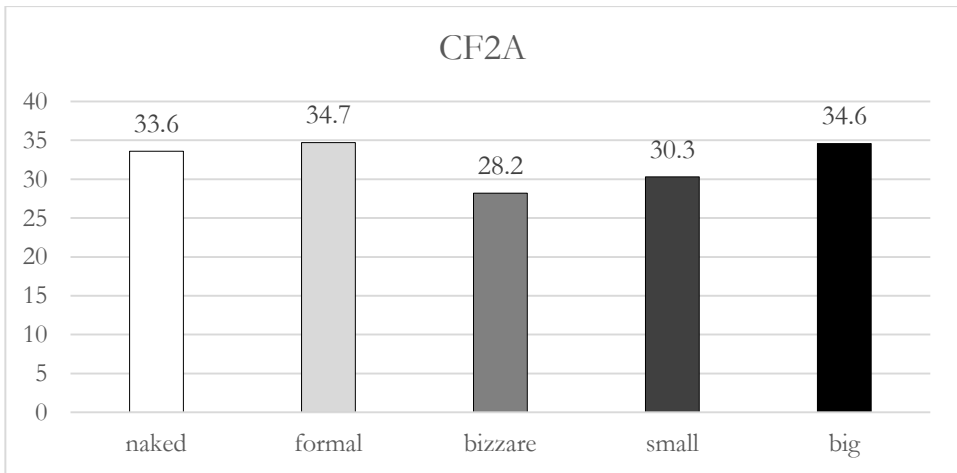


Figure 5. Raw score in Raw score in the test CF2A

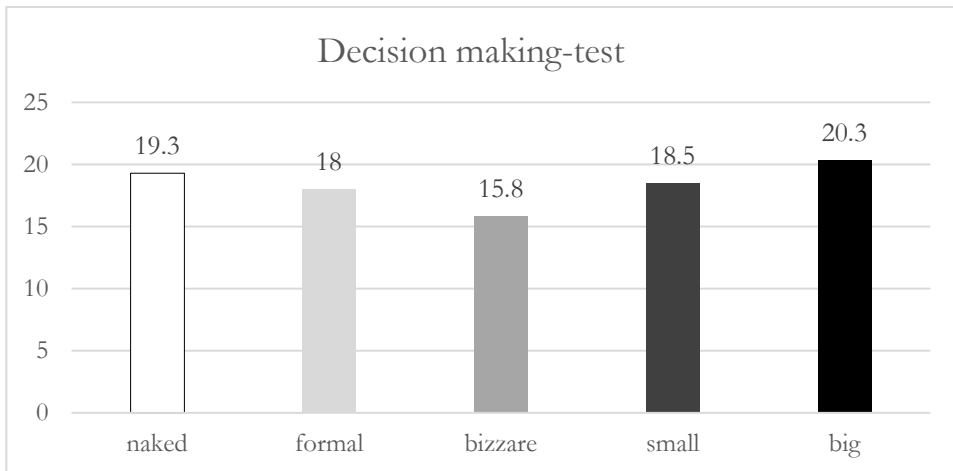


Figure 6. Raw score in the Decision making test

Differences that were found in the test ISA-S are presented in the Table 2 also with the rate of effect (producers of bizarre figure reached the lowest score in 8 from nine subtests of ISA-S test, as well as in the total score). Significant differences in intelligence tests were also between authors of bizarre and dressed figures (Table 3). Pictures of nude figures and drawings of well-dressed persons are characterized by figure maturity, well elaborated drawing and usually detailed figure depiction what is the opposite of bizarre pictures. Relation of weirdness to results of intelligence tests that is found repeatedly could be called as convincing. Interpretation of this phenomenon alone could not be as simple as when explaining relation of drawing weirdness and lower score in the test of space intelligence (CF2A). Character of a drawing for which it is typical picture disorganization, its disproportion, could be connected to small damage of CNS, what could be a reason for worse result in CF2A. Worse result in the whole scale of intellectual abilities measured by ISA-S (verbal, non-verbal, numeric) has to be conditioned by “wider” reasons. We can think about social and cultural handicap, insufficiency of logical thinking etc., possibly personal maturity/immaturity. These are reasons with higher heuristic value but to confirm them it is necessary special research, we restrict only to state the fact that bizarre figure is connected to lower intellectual performance, as it is measured by abovementioned tests.

Table 2 Significant differences between authors of bizarre figures and nude figures in subtests of the ISA-S test

	SE	BE	WM	WE	PR
Corrected significance	0,001	0,002	0,004	0,003	0,008
Z	-3,38	-3,12	-2,89	-2,99	-2,65
Effect degree d	0,69	0,63	-0,59	-0,61	-0,54

Table 3 Significant differences between authors of bizarre figures and figures in formal suits in subtests of the ISA-S test and CF2A test

	CF2A	ISA ZF	ISA WE
Corrected significance	0,003	0,003	0,003
Z	-3,02	-2,94	-3,38
Effect degree d	-0,60	-0,58	-0,67

4.1. Limits

Our assessment of drawings is holistic; we have tried to identify complex types of figures that are mutually unambiguously different. That noticeably limits number of drawings in groups. Weirdness in our perception is probably combination of poor artistic quality of drawing and its weirdness, two global indicators as it is presented in relevant literature e.g. authors Dans-Lopez and Tarroja (2010) present several quotations. General poor artistic quality of drawing is connected to simplicity or deformations of drawing, with unskillfulness, rudeness, simplicity and low accuracy of body parts and to primitive appearance. So complication is not only a definition of categories but also terminological ambiguity. Situation is also complicated by intercultural differences in drawings, they have not been discussed, but has been more studied their influence on drawings (e.g. Binson et al., 2019). Studies of psychometric equivalents of the “Test of human figure drawing“ also have to cope with “sober opinions” (compared to unambiguously negative attitudes) on low usability in adult population (e.g. Joy 2013) and/or on “impossibility to simply test” psychoanalytic basis on which the test is based and that has been for a long time a source of various information on the test (Kahill, 1984). From perspective of statistical importance of acquired results in executed study the differences between “bizarre”, “dressed” and

“nude” seem (with some exceptions) small. Bigger differences between producers of bizarre figures and participants of two other groups (dressed and nude figures) are only in the factor neurosis in DOPEN. We have acquired more interesting results in intelligence test (ISA-S, CF 2A) but also in the test “Decision making” aimed at understanding of some thinking operations where authors of bizarre drawings reached the lowest values. Limit to application of results into practice is the research design of study that is, though, immanent to selected attitude to the problem. When speaking about important differences between identified types of drawings we have to limit ourselves only to this field (group types). Results, according to the extent of the group (n=525) do not enable to state some higher or lower level of given quality of a person who is a producer of drawing of given type (e.g. bizarre drawing) generally in relation to all other drawings, what is an indisputable limitation in practical use of the test.

5. Conclusion

Results indicate that for correct interpretation of drawings it could be applicable especially the complex factor “drawing weirdness”, prospectively with psychometric parameters. Newer studies also support such consideration. For example, Yama (1990) acquired results which proved that extent of “general artistic quality”, “weirdness of a drawing” and “estimated psychical adjustment” had been changed linearly in dependence on how many times a client was put into substitutive care. He considers extent of figure weirdness as adequate predictor of the criterion - psychical adjustment. Also Dans-Lopez and Tarroja (2010) in their interpretation favour indicators of global artistic quality and weirdness of figures drawings. Serious handicap of these efforts is, though, not only unclear preference of holistic, intuitive and artistic attitudes to drawings assessment compared to qualitative approaches but also big differences between used global systems and/or evaluations used by various authors. Besides that used assessment systems need not to be definitely correct (most often mixing of global and individual parameters of drawings).

Weirdness of drawing - according to Batongbacal (2000) and also to other authors quoted by Dans-Lopez and Tarroja (2010) - is not a priori connected with simplicity or with deformations of drawing, but in such cases there were made more “monsters”, inhuman figures, supernatural or strange depictions” (Dans-Lopez and Tarroja, 2010) while they refer to figure convention as an opposite pole. Authors try to quantify this exclusively qualitative parameter according to the individual features of a drawing e.g. by occurrence of a shaky line of drawing, baring teeth, big disproportions in a

drawing etc., but also by global indicators such as “bizarre drawing” and “primitive appearance”. Global indicators selected this way, of course, guarantee high correlations with global term bizarre but it could not be considered scientifically correct. Acton (1995), in the opposite, characterizes weirdness of a drawn figure as a degree of deviance from reasonable representation of a human body. He, though, does not specify reasonable representation. He registers disruption of form and size (disproportionate to other part of figure) and positions of body parts. Parts of figure have to be very poorly expressed, “damaged”, their shape deformed or disproportioned - in big disproportion to other parts of a figure, possibly they are improperly placed. Weirdness connects with thinking malfunction. Altman briefly mentions bizarre drawing which he understands as extraordinary unusual and/or idea of a drawing is unusual. It is clear without clear definition what is a bizarre drawing, what is primitive or low-quality drawing, it is impossible to acquire convincing proofs on method validity and on practical use of the criterion “bizarreness”.

References

- Acton, B. (1995). *A new Look at Humane figure drawings: Results of a meta-analysis and drawing scale*. [Dissertation thesis, S. Fraser University].
<http://summit.sfu.ca/system/files/iritems1/6703/b17501519.pdf>
- Altman, Z. (2011). *Kresba postavy* [Human figure drawing]. Hogrefe – Testcentrum.
- Badošek, R. (2011). *Vypovídací schopnost vybraných znaků metody 'Kresba lidské postavy' u dospělé populace*. [The explanatory ability of selected features of the 'Human figure drawing' in the adult population] [Disertation work. Univerzita Palackého v Olomouci, Filozofická fakulta].
- Badošek, R. (2013). Projektivní forma kresby lidské postavy - domněnky a fakta. [Projective drawing the human figure method - myths and facts]. *Československá psychologie*, 57(5), 496-504.
- Batongbacal, D. (2000). *Detecting sexual abuse in children through human figure drawings: A methodological study* [Unpublished master's thesis, Ateneo de Manila University, Quezon City, Philippines].
- Binson, B., Federman, D., & Lev-Wiesel, R. (2019). Do self-figure drawings reveal the drawer's cultural values? Thais and Israelis draw themselves. *Journal of Humanistic Psychology*. <http://dx.doi.org/10.1177/0022167819831082>
- Cattell, R. B., & Cattell, A. K. S. (1970). *Cattell culture fair intelligence test* (Z. Heinzl & N. Janoušková, trans.). Psychodiagnostic and didactic tests.
- Dans-Lopez, G., & Tarroja, M C H. (2010). Exploring Human figure drawings as an assessment tool for departing OFW domestic helpers and caregivers. *Philippine Journal of Counseling psychology*, 12(1), 13-38.

https://www.researchgate.net/publication/228630118_Exploring_Human_Figure_Drawings_as_an_Assessment_Tool_for_Departing_OFW_Domestic_Helpers_and_Caregivers

- Démuthová, S. (2010). Kresba ľudskej postavy ako diagnostická metóda u delikventov. [Human Figure Drawing as a diagnostic method for delinquents]. In S. Démuthová (Ed.), *Zborník príspevko* (pp. 32-51). Trnava, Katedra psychológie FF Univerzity sv. Cyrila a Metoda v Trnave
- Fábry, R. (2015). Test kresby ľudskej postavy, typológia kresby ako možná interpretačná paradigma [Human Figure Drawing Test, Typology of Drawing as a Possible Interpretative Paradigm]. *Československá psychologie*, 59(5), 431-443.
- Fábry, R., & Jurovatý, P. (2013). Veľkosť a poradie kresby v teste kresby ľudskej postavy v kontexte pohlavia účastníka. [The Size and the Order of the Drawing in the Human Drawing Test in the Context of the Gender of Participant]. *Klinická psychologie a osobnosť*, 2(1), 45-52.
- Fay, E., Trost, G., & Gittler, G. (2001). *Analýza štruktúry inteligencie* [Intelligence Structure Analyses]. Psychodiagnostic and didactic tests.
- Gigi, A. (2016). Human figure drawing Test is affected by cognitive style. *Clinical and Experimental psychology*, 2(1), 111. <http://doi.org/10.4172/2471-2701.1000111>
- Goodenough, F. (1926). *measurement of intelligence by drawing*. Yonkers-on-Hudson
- Groth-Marnat, G., & Roberts, L. (1998). Human figure drawing and House tree persons drawing as indicators of self - esteem: A Quantitative approach. *Journal of Clinical Psychology*, 54(2), 219-222. [https://doi.org/10.1002/\(sici\)1097-4679\(199802\)54:2%3C219::aid-jclp11%3E3.0.co;2-m](https://doi.org/10.1002/(sici)1097-4679(199802)54:2%3C219::aid-jclp11%3E3.0.co;2-m)
- Harris, D. B. (1963). *Children's drawings as measures of intellectual maturity*. Harcourt, Brace & Brace.
- Imuta, K., Scarf, D., Pharo, H., & Hayne, H. (2013). Drawing a Close to the Use of Human Figure Drawings as a Projective Measure of Intelligence. *PLoS ONE*, 8(3), e58991. <https://doi.org/10.1371/journal.pone.0058991>
- Joy, S. (2013). *Can we use HDF with adult population*. [https://www.researchgate.net/post/Can we use Human Figure Drawing Test HFD with adult population](https://www.researchgate.net/post/Can_we_use_Human_Figure_Drawing_Test_HFD_with_adult_population)
- Kahill, S. (1984). Human figure drawing in adults: An update of the empirical evidence, 1967-1982. *Canadian Psychology*, 25(4), 269-292. <https://psycnet.apa.org/doi/10.1037/h0080846>
- Komárová, E. (1993). *Rozhodovanie v časovom strese* [Decision Making Test in Time Stress]. Brno. Psychological Services Center.

- Koppitz, E. M. (1968). *Psychological evaluation of children's human figure drawings*. Grune & Stratton.
- Lilienfeld, S., O., Wood J., M., & Garb, H. N. (2000). The scientific status of projective techniques. *Psychological science in the public interest*, 1(2), 27-66. <https://doi.org/10.1111/1529-1006.002>
- Machoverová, K. (1953). *Personality projection in the drawing of the human figure (A method of personality investigation)* (3rd ed.). Charles C. Thomas.
- Maserati, M., D'Onofrio, R., Maticena, C., Sambati, L., Oppi, F., Poda, R., De Matteis, M., Naldi, I., Liguori, R., & Capellari, S. (2018). Human figure drawing distinguishes Alzheimer's patients: cognitive screening study. *Neurological Sciences*, 39, 851-855. <https://doi.org/10.1007/s10072-018-3288-3>
- Mikšík, O. (1991). *Zjišťování struktury a dynamiky psychické odolnosti a integrovanosti osobnosti, dotazníky řady IHAVEZ-SPIDO-VAROS*. [Determining of Structure and Dynamics of Mental Resilience and Integration of Personality, IHAVEZ-SPIDO-VAROS questionnaires]. Psychodiagnostika.
- Mitchel, J., McArthur, R., & Trent, R. (1993). *Human Figure Drawing Test (HFDT): An illustrated handbook for clinical interpretation and standardized assessment of cognitive impairment*. Western Psychological Services.
- Morena, D. (1981). The Healthy drawing. In G. Groth-Marnat & D. Morena (Eds.), *Handbook of psychological assessment: A practical manual*. [Unpublished manuscript, pp. 61-76].
- Motta, R., Little, S., & Tobin, M. (1993). The use and abuse of human figure drawings. *School Psychology Quarterly*, 8(3), 162-169. <https://psycnet.apa.org/doi/10.1037/h0088273>
- Naglieri, J. A. (1988). *Draw a Person : A quantitative scoring system*. Psychological Corporation.
- Piotrowski C. (2015). Projective techniques usage worldwide: A Review of applied settings 1995-2015. *Journal of Indian Academy of Applied Psychology*, 41(3), (Special Issue), 9-19. https://www.researchgate.net/publication/273004208_Projective_techniques_usage_worldwide_A_review_of_applied_settings
- Reynolds, C. R., & Hickman, J. (2004). *Draw a Person intellectual Ability Test for Children, Adolescents, and Adults. Examiner's manual*. Texas Pro-Ed.
- Ruisel, I., & Müllner, J. (1991). *DOPEN - Osobnostný dotazník na meranie psychotizmu, extra-introverzie, neurotizmu* [Personality Questionnaire for Measuring of Psychoticism, Extra-introversion, Neuroticism]. Psychodiagnostic and didactic tests.
- Strumfer, D. (1963). The relation of Draw a Person variables to age and chronicity in psychotic groups. *Journal of Clinical Psychology*, 19, 208-211.

- [https://psycnet.apa.org/doi/10.1002/1097-4679\(196304\)19:2%3C208::AID-JCLP2270190219%3E3.0.CO;2-A](https://psycnet.apa.org/doi/10.1002/1097-4679(196304)19:2%3C208::AID-JCLP2270190219%3E3.0.CO;2-A)
- Šturma, J., & Vágnerová, M. (1982). *Kresba postav*. [Human Figure Drawing]. Psychodiagnostické a didaktické testy.
- Tharinger, D., J., & Stark, K. D. (1990). A qualitative versus quantitative approach to evaluating the Draw-A-Person and Kinetic Family Drawings: A study of mood and anxiety disorder children. *Psychological Assessment: A Journal of Consulting and Clinical Psychology*, 2(4), 365-375.
<https://doi.org/10.1037/1040-3590.2.4.365>
- Vágnerová, M. (2017). *Vývoj dětské kresby a její diagnostické využití*. [Development of Childrend's Drawing and its Diagnostic Use]. Raabe.
- Velez-van-Meerbeke, A., Halliday, K., J., & Talero-Guetiérrez, C. (2011). Validation Study of Human figure drawing Test in Colombian school children population. *The Spanish Journal of Psychology*, 14(1), 464-477.
https://doi.org/10.5209/rev_SJOP.2011.v14.n1.42
- Wang, H. X., Ericsson, K., Winblad, B., & Fratiglioni, L. (1998). The human figure drawing test as a screen for dementia in the elderly: A community-based study. *Archives of gerontology and Geriatrics*, 27, 25-34.
[https://doi.org/10.1016/s0167-4943\(98\)00014-4](https://doi.org/10.1016/s0167-4943(98)00014-4)
- Yama, M. (1990). The Usefulness of Human Figure Drawings as an Index of Overall Adjustment. *Journal of Personality Assessment*, 54(1-2), 78-86.
<https://doi.org/10.1080/00223891.1990.9673976>