ISSN 1512-1801

УДК 159.925.2 (575.1)

# HEREDITARY SIGNS OF THE TRAIT RESPONSIBILITY OF MALES

Akbarova Sanobar Narzikulovna, Botir Mirhoshimovich Tadjiyev, Abdumavlon Yuldashevich Islamov
Tashkent Pediatric Medical Institute,
Uzbekistan, 100140, Taskent city, Bogishamol 223.

***Abstract:***
*The study deals with revealing connection between personal trait responsibility and dermatoglyphics in different two researches. In the first research participants were 489 male teenagers (from 16 to 17 years old) and in the second one 208 male students of TashPMI (from 18 to 25 years old). The responsibility trait was examined by utilizing Expert Estimation Questionnaire (EEQ) that was reflected in four levels in the first stage of work. In the second stage, Cattell's 16 PF Questionnaire was used that led to making up six degreed responsibility groups of participants by factor G (Rule-Consciousness). In this article we showed only a case of relation between one dermatoglyphic sign (axial triradius) and the trait responsibility. We revealed, that in the groups, where responsibility level was decreased, the occurrence percentage of axial triradius (t) had tendency to increase on the both hands. This result considered the relationship between t and responsibility in inverse proportion. On the contrary, other triradius (t′) had tendency to decrease the responsibility in the groups either. So relationship between t′ and responsibility was in direct ratio. The differences in occurrence of t and t′ were in opposite poles of responsibility' reflection, those were presented in first and last groups, and, were statistically analyzed by Student criterion. These differences were essential at $p<0.01$, and, the results proved the existence of heredity bases of the trait of responsibility.*

***Keywords:*** *responsibility, personality traits, heredity, dermatoglyphics*

The development of genetics reached the degree, that scientists have already passed how to discuss legal-standard and forecasting sides of the problem for elections of genes of our future children by intervention in human genetics. There are also some achievements of obvious innovations in questions on nature of psychological characteristics origin and behavior of person in certain directions of psychology.

Study the nature of psychological structure origin for person is important to definite the reason of occurrence various antisocial behavior, i.e. activity being performed by the person and directed against the society, development, and also to find the original possibility to eliminate such behavior. Furthermore, for study the nature of psychological traits' origin the person; it is important to develop such personal traits that play the important role in development mankind in young generation as more as possible at high level.

Throughout the different period of time and societies the personal trait was considered as highly estimated and appreciated the trait of responsibility. The study of this trait was performed in the field of Philosophy, Psychology and Legislation in some way. As it is known study of any concept begins with giving a definition. There are a lot definitions being given to the trait of responsibility for person by different scientists (Table 1.)

ISSN 1512-1801

**Table 1. Definition of responsibility.**

| | Author | Definitions of the psychological trait of responsibility |
|---|---|---|
| | Political theorist Joan Tronto, (1993) | "Responsibility is "taking care of" something or somebody" [1]. |
| | Schlenker BR, Britt TW, Pennington J, Murphy R, Doherty K, (1994) | "Responsibility acts as a psychological adhesive that connects an actor to an event and to relevant prescriptions that should govern conduct" [2]. |
| | Raffoul F, (2010) | "Responsibility, as responsiveness to such arrival of the other, is incalculable, impossible, and absolutely 'of the others'. The responsibility or responding-to who or what happens/arrives is a responsibility to the event as unpredictable" [3]. |
| | Rhéaume J. et al, (1994), (definition for obsessive-compulsive disorder) | "Responsibility is the belief that one has pivotal power to provoke or prevent subjectively crucial negative outcomes. The outcomes may be actual, that is real world, or moral" [4]. |
| | Raatma L., (2001), (definition for children) | "Responsibility means doing what you say you will do. Responsible people try hard keep their promises. Responsibility can be shown such as taking care of a pet, and completing homework and other school assignments" [5]. |

We can't imagine the stability and developing of society without participation of the persons' responsibility. The more the status of control, the more responsibility trait is.

The Psychology studies the trait responsibility by dividing it to several kinds. For example, Shoemaker (2015) [6] described two kinds of responsibility: Moral and criminal responsibility. But other scientists as Clarke, McKenna & Smith A. (2015) [7] divided responsibility by using three terms: "Moral responsibility", "substantive responsibility" and "responsibility as attributability".

There were also some argues about being existence of responsibility in artificial system (see consistent with *Patrick, 2014; Colin, Gary & Jason, 2000, for discussion).*

Discussing on topic trait of human responsibility Seligman, Olson & Zanna (2013) [8] found it as complex concept that related to "person's actions and intentions and to a person's defined role".

Formation of sense of responsibility begins in childhood. Weiner (1995) [9] described initial occurrence of responsibility for child by the next example: An infant who wets the bed is not responsible for it before he or she "...does not recognise it as 'wrong'. But if that child were two or three years of age, then responsibility would be imposed".

The trait responsibility as one of certain trait of personality have been already reflected in Interpersonal Circle (IPC) by Leary (1957) [10] and in 16 PF (Cattell & Schuerger, 2003) [11]. By the way, discussing on everyday occurrences, as responsibility, Weiner (1995) consider that "few psychologists have the courage (hubris?) to tackle issues about which Aristotle has written an entire treatise" [9]. Especially, the roots of origin of this trait are not clearly proved yet, though Behavior Genetics has a law that says "All human behavioral traits are heritable" (Turkhemer, 2000) [12]. If responsibility has heredity base following this law, it must have a connection with some phenotype features of person. To examine of this hypotesis was signed as the main purpose of our research.

**Participants**

Research work was provided in two stages. In the first stage the pupils of the secondary schools (408 males, $M_{age}$=16.5, age range: 16-17 years) participated in this research. All these teenagers of 10-11 classes studied in 2000-2002 years at schools located in Yunusabad and

ISSN 1512-1801

Shayhantohur districts of Tashkent city. Participants were Uzbek nationality. The empiric materials were taken (for dissertation on PhD) with permission of National education municipal government.

In the second stage the research was provided in the first course students (208 males, $M_{age}$=20.8, age range: 18-25 years) of Tashkent Pediatric Medical institute in 2015. These participants were also of Uzbek nationality. All materials were taken by observing ethical standards of carrying out of psychological researches.

**Materials, methods and procedure**

The research concept was based on methodological principles of determinism. Special regularity –"Heredity regularity of psychological properties of person" (Akbarova, 2014 b) [13] that did not reach a level being a law yet, because it depends on other researchers checking, examine and concluding of this regularity, though this regularity already helped to prove existing of heredity base (and its level to some extend) of several personal traits as kindness, shyness, quickness (of mind), naughty, bravery, neuroticism, (Akbarova, 2015) [14], aggression (Akbarova & Matveeva, 2014) [15], volition (Akbarova, 2014 c) [16] and rudeness (Akbarova & Nurkhodjaev, 2015) [17].

Our purpose was to study relationship of personal traits as responsibility with dermatoglyphics, because of "Heredity regularity of psychological properties of person" demands to study mainly dermatoglyphic features of persons. Dermatoglyphics - ("derma" - leather, "glyphe" - carving patterns) is scientific direction is study papillary lines on the hands and soles of the feet (Zaletayeva, 1976) [18] and it suggested to be one of the research methods of psychology (Akbarova, 2014 a) [19].

There were compared two kinds of materials concerning persons. The first of them was the dermatoglyphical features on palms and fingers. Dermatoglyphic signs were taken and analyzed by method of Gladkova (1966) [20]. We gave attention to such signs of dermatoglyphics as the termination of main palmar lines DCBA, palmar triradius, patterns on thenar and hypothenar, patterns on interdigital areas, drawings on fingers.

Second material related to the trait responsibility. "Heredity regularity of psychological properties of person" was described by following state "The gradual trend of increasing or reduction of frequency occurrence for certain dermatoglyphics features in groups, where the researching psychological property is expressed in ascending or descending order, and it proves that the studied psychological property has a genetic basis" (Akbarova, 2014 b) [13]. In order to make these groups of respondents it was necessary to use special questionnaire which able to reflect studied psychological trait in several degree. To achieve our goal it was developed Expert - Evaluation questionnaire (EEQ), where experts were parents, class teacher and classmates of the respondents. The questionnaire contained question that express four level of reflection responsibility:

1) Responsibility expressed at a high level;
2) Responsibility expressed at an average level;
3) Reflected little responsibility;
4) Have no responsibility.

We have studied frequency of dermatoglyphics occurrence in groups where responsibility level was reflected in decreasing degree, thus it led our exploration to check heredity base of responsibility.

In the second stage of this research we used translated and adapted for Uzbek population method of Cattell's 16 PF Questionnaire, where the trait of responsibility concerned to factor G. As it is known factor G is named as Rule-Consciousness and left pole of this factor reflects personal traits of expedient, nonconforming, disregards rules, self-indulgent; and right pole notes rule-conscious, dutiful, conscientious, conforming, moralistic, staid, rule bound.

ISSN 1512-1801

**Valence and arousal ratings.** Some sites of our research method are not familiar for psychologists, and that is why we considered explaining specific features related to valence and arousal ratings. All nationalities and populations have their genetic data that distinguishes to some extent. In order to study real relationship (without having regards to national differences) between psychological traits and dermatoglyphics we studied separately only one nationality - Uzbek nationality. Few participants were other nationality, as the Tatar, the Turkmen, the Tajik, but we analyzed mathematically the data only of Uzbek nationality participants. The gender differences in genetic data that leads to dermatoglyphical differences also were taken into account during data analyzing. In this article we described the results concerning only to male participants.

In Psychology the process of measurement of personal traits has specific character. An international etalon to measure of quantity of any personal traits does not exist. That is why the measurement of the certain personal trait often has descriptive character. As it is known, the descriptive estimation of some certain person by several experts can be different and arguable. For example, a mother estimated her son as "his responsibility expressed at a high level", but class teacher gave him another variant of estimation as "his responsibility expressed at an average level" and exc. In the case if all experts' estimation is the same, we can consider that accuracy degree of the estimation is high. So, in the first stage our research, we have allocated the data related to Expert - Evaluation questionnaire (EEQ) by taking attention to similarity of estimating of the level of responsibility in the participants. The respondents who were described by all three experts as "Responsibility expressed at a high level" consisted of the first group. The second group was made with respondents whose estimation was reflected as "Responsibility expressed at an average level". The third group presented persons with "Reflected little responsibility". Following the experts' estimation the fourth group's pupils "Had no responsibility". For mathematical analyze it is demanded that the groups must consist of minimum ten participants. Sometimes it is difficult to collect necessary quantity of participants for the first or fourth group by using EEQ. This results from the fact that there are more people with average reflected personal trait (concerning to a lot of different traits) than with high or low one in a population. If the general number of participants consists of a lot enough (ours were about five hundred, but we can't specify exact quantity to be enough yet) it is possible to create the group by next way. First of all the degree of responsibility reflection must be conditionally appropriated by following points: Responsibility expressed at a high level – 1 point; Responsibility expressed at an average level – 2 points; Reflected little responsibility – 3 points; Have no responsibility – 4 points. Then, the points given by all experts to concrete participant must be combined. So each participant from the first group had three points, second group had 6 points, third group with 9 points and fourth group must have 12 points. In the case if the first or fourth group consists of a little number of participants we suggest to add there other participants with four points for the first group and with 11 points for the fourth group. Thus it is possible to fill up lacked quantity respondents in group.

Further, the signs of dermatoglyphics were comparatively analyzed in those four groups. We interested in observing such dermatoglyphic signs whose frequency occurrence gradually was increasing or decreasing in those four groups. We have found these cases and further statistically compared only the first and the fourth groups. Reliability of the empiric material concerning to dermatoglyphic signs was checked by Student criterion, by following formula:

ISSN 1512-1801

$$t = \frac{P_1 - P_2}{\sqrt{\frac{N_1P_1 + N_2P_2}{N_1 + N_2}\left(100 - \frac{N_1P_1 + N_2P_2}{N_1 + N_2}\right)\frac{N_1 + N_2}{N_1 * N_2}}}$$

, where

P-percentage occurrence of dermatoglyphic sign ($P_1$ – in the first group; $P_2$- in the fourth group); N-number of respondents in the study group ($N_1$ – in the first group; $N_2$- in the fourth group); t -test Student (Urbah V.Yu., 1963) [21].

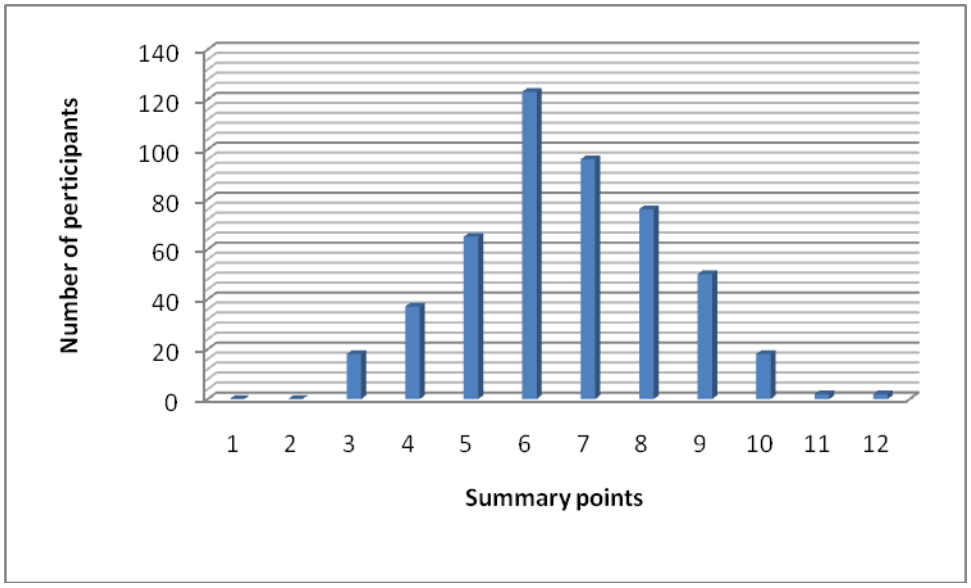
In the second stage, the trait of responsibility was estimated by Cattell's 16 PF Questionnaire's ball. Usually it differs from 0 to 10. Our participants were divided into several groups by according to same results in G factor of Cattell's test. Further, dermatoglyphic signs' frequency occurrence in these groups, were compared. Thus, we examined heredity regularity of responsibility in two separate cases that led to accuracy check of the observable phenomena in the received data.

**Results**

**A. Relation between dermatoglyphics and responsibility (by EEQ) of 16-17-years-old males.**

Estimation of the trait responsibility by EEQ of studied four hundred eighty nine participants resulted in the next tendency dividing groups with different general points (see Figure 1).

**Figure 1. Distribution of responsibility reflection into groups by experts points.**




As it can be seen from the Figure 1, there were a few respondents who have got 12 points from experts. In order to solve this obstacle during making the fourth group we added to the this group respondents with 11 and 10 points where each expert gave them only 3 or 4 points. We didn't add there respondents with points 10 where one of experts gave them 2 points and others by 4

ISSN 1512-1801

points, because respondents with 4+4+4 points; 3+4+4 points and different combination of 3+4+3 points already consisted of necessary number of the fourth group.

The first group is comprised of 18 respondents with 1+1+1 points. The second one was made up by 64 participants who had 2+2+2 points. 27 respondents with 3+3+3 points comprised the third group and there were 15 participants in the fourth group. The remaining respondents were not identical evaluation by experts, and were excluded from further analysis.

Analyzing dermatoglyphic signs in these four groups resulted in revealing significant relation between responsibility degree and axial triradius of the both hands. Triradius is a point, where the papillar lines begin in three different directions. Axial triradius located on the palm from centre of palm to carpal bend fold (Figure 2.) and it distinguishes several kinds: t (angle atd to 40°), t′ (angle atd from 41° to 60°), t″ (angle atd from 61° to 100°), t‴( angle atd about 100°- 108°).

Percentage of occurrences of triradius t on the both hands increased from the first to the fourth group, despite it was not linearly; and triradius t′, on the contrary, was decreased (Table 2.).

Student criterion indicated high differences of triraduises t and t′ in the opposite poles of responsibility reflection in the first and fourth group. Triradius t distinguished on the right hand ($p<0.01$) and on the left hand ($p<0.1$) in these groups. Triradius t′ also had high differences: on the right hand by $p<0.01$ and on the left hand by $p<0.1$.

**Figure 2. Location of the axial triradiuses.**

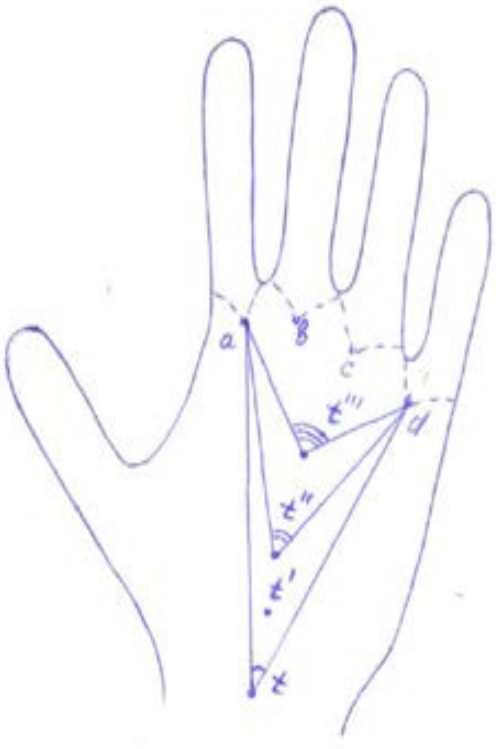



**Table 2. The triradius on the palm of the hand in the studied 4 groups (males).**

| Group № | The triradius, % | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Right hand | | | | | | Left hand | | | | | | | |
| | **T** | **t′** | t″ | 0 | t, t' | t,t'' | **t** | **t′** | t″ | t,t | 0 | t, t' | t,t'' | t′,t‴ |
| 1 (18) | **29,4** | **58.8** | - | 5,8 | 5,8 | - | **41,1** | **47** | - | - | 5,8 | 5,8 | - | - |

ISSN 1512-1801

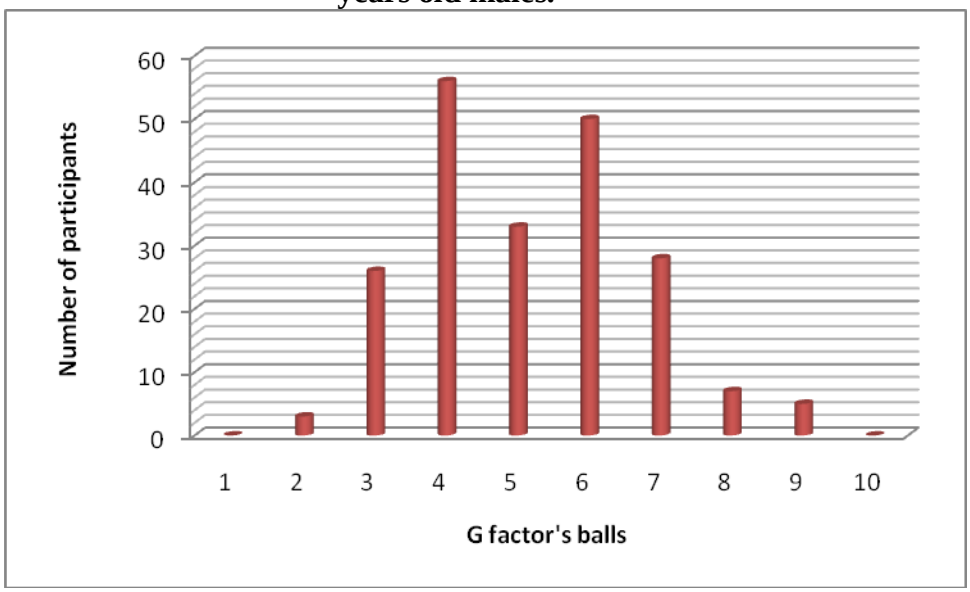
| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 (64) | **70,6** | **24,1** | - | - | 1,7 | 3,4 | **56,8** | **34.4** | - | 1,7 | - | 3,4 | 3,4 | - |
| 3 (27) | **66,6** | **33.3** | - | - | - | - | **51,8** | **40.7** | - | - | 3,7 | - | - | 3,7 |
| 4 (15) | **93,3** | **6,6** | - | - | - | - | **80** | **13,3** | - | - | - | 6,6 | - | - |

### B. Relation between axial triradius and responsibility (by Cattell's 16 PF Questionnaire) of 18-25-years-old males.

Two hundred and eight males (students) in the second research were studied, showed their balls concerning to G factor by Cattell's 16 PF Questionnaire from 2 to 9 balls (see Figure 3).

In order to compare frequency occurrence of dermatoglyphic signs we made up six groups in order decreasing degree of responsibility: participants with 9-8 balls included the first group (12 males), another groups in order included males with 7 (28 males), 6 (50 males), 5 (33 males), 4 (56 males) and 3-2 balls (29 males).

**Figure 3. Distribution of G factor's (by Cattell's 16 PF Questionnaire) balls in 18-25 years old males.**




Differently from the first research stage with EEQ, in this stage all participants' data were included in the process of analyzing.

Analyzing of tendency of percentage changing of axial triradius t in the both hand, we observed the same case as in previous research. The Table 3 shows that the less degree of responsibility, the more occurrence percentage of triradius t in about all groups. Only one group (second one) from six groups does not show this tendency.

**Table 3. Tendency of axial triradius (t and t′) in the six groups of responsibility (by Cattell's 16 PF Questionnaire).**

| | | The triradius, % | |
|---|---|---|---|
| | | Right hand | Left hand |

ISSN 1512-1801

| Group № | N | **t** | **t′** | **t** | **t′** |
|---|---|---|---|---|---|
| 1 | 12 | **25** | **58,8** | **33,3** | **66,6** |
| 2 | 28 | 60,7 | 32,1 | 71,4 | 28,5 |
| 3 | 50 | **40** | **52** | **44** | **50** |
| 4 | 33 | **51,5** | **36,3** | **51,5** | **39,3** |
| 5 | 56 | **51,7** | **32,1** | **50** | **37,5** |
| 6 | 29 | **65,5** | **27,5** | **75,8** | **17,2** |

N – number of participants; t − angle atd to 40°, t′ − angle atd from 41° to 60°

Calculating Student criteria, we found high differences of triraduises t and t′ in the opposite poles of responsibility reflection in the first and sixth group. Triradius t is distinguished on the right hand ($p<0.01$) and on the left hand ($p<0.1$) in these groups. Triradius t′ also had significant differences: on the right hand by $p<0.1$ and on the left hand by $p<0.01$.

## Discussion

The dermatoglyphics it is an external reflection of genotype - phenotypic trait and it is an original reflexion of genetic code of the person. Following this state the findings in our researches have proved that the trait of responsibility has heredity bases. Also responsibility connected with the termination of main palmar lines DCBA and palmar triradius, patterns on hypothenar, patterns on interdigital areas, drawings on fingers to some extent. We assume that the more deramtiglyphic signs related to personal trait, the more genes participate in regulation of that trait. These findings confirmed that "genetically influenced personality traits are more likely to originate in the action of multiple genes (polygenic inheritance)" (Buss & Plomin, 2014) [22].

Girls' responsibility must be separately studied too, because researchers consider that sometimes sex differences in heritability probably exist (Thomas & Bouchard, 2004) [23]. For example, in some researches devoted to study the trait responsibility "findings indicated gender differences in both levels and content of psychological responsibilities for children" (Bodnar, 2007) [24]. In previous researches devoted to dermatoglyphics and other personal traits it was revealed sex differences in relationship (Akbarova, 2015) [14].

Nowadays the sciences of Psychology and Genetics have a lot evidences that proved some aspects of personality is heritable. But this state is not widely-distributed in the world sciences as Laws of Nyuton. The main goal of any science is discovering, finding and realizing them in the practical actions for developing processes of society.

We think heritability of personality can be studied deeply and realized in the education and upbringing processes by taking into account next opinions. Researchers said that "genetic influences on personality differences are ubiquitous, but their nature is not well understood." (Penke, Denissen & Miller, 2007) [25]. There is also a hypothesis assumed by some researchers that "genetic differences affect psychological differences largely indirectly, by influencing the effective environment of the developing child" (Bouchard, Lykken, Gue, Segal & Tellegen, 1990) [26]. It is just hypothesis, whether genes influence to the personal traits directly or indirectly is not known and not proved yet, though in the last researchers work it was tried to reveal some link between certain gene and behavior (Wu, Shang & Su, 2015) [27]. We think of that usage of dermatoglyphics method in studying nature of any psychological feature can be more effective, it gives even possibility to consider the range of genes influencing to the traits. We didn't agree with opinion which says

ISSN 1512-1801

"genetic influence is in the range of 40 to 50%, and heritability is approximately the same for different traits" (Thomas & Bouchard, 2004) [23]. In previous researches it was revealed different range of connection between dermatoglyphics and personal traits. We consider that genes influence' range distinguishes for the different personal traits. For example, it was concluded that the trait of bravery is under high level of genes influences (Akbarova, 2014 d; Akbarova, 2015) [28,14], because there was a dermatoglyphic sign the persentage of occurance of it in the fourth group differed from 0 % to 84 %. Following our findings related to trait responsibility we can say that it is under moderate genetic basis. The more genetic base of the trait, the less it depends on environment. So this state notes that the trait of responsibility depends on environmental conditions too. If further researches related to increasing of the trait of responsibility in the persons will be done by having regarded to existing certain dermatoglyphic signs connected with responsibility, it can help to study relationship between heredity base and environment in the process of formation responsibility.

In the next part of discussion about results on the second table we must take attention to numbers of t and t′ which changes in the fourth groups being not linearly. We assumed that if studied trait has heredity base these numbers must be linearly increasing or decreasing. But the estimation of experts concerning to second and third groups have not justified our expectations. It can be explained by following opinion: the experts who estimate reflection degree of somebody's responsibility trait confuses when this degree concerns middle range. Probably sometimes in the case if responsibility reflected between no existing and little existing, some experts prefer or consider that it would be like about average level. All participants were estimated by different experts and they have their own measure which differ each other. That's why we said in heredity regularity about revealing only tendency of increasing or decreasing, we did not mention about linearly increasing or decreasing. If percentage of some dermatoglyphics occurrence in the second and third group differ a little bit and both number located between first and fourth number, so we can consider that tendency of increasing or decreasing is exist.

In the second stage where we made up six degreed responsibility groups by using Cattell's 16 PF Questionnaire, we can more clearly observe that dermatoglyphic signs as axial triradiuses t and t' linearly increasing and decreasing accordingly, excluding second group. The reason for the case in the second group is not understandable for us, yet, but this case can't be some serious obstacle to consider that there is certain link between responsibility and axial triradius t and t′. Comparing results of the first and the second stage of this research showed the same tendency of changing occurrence percentage of axial triradiuses t and t′. It proved more seriously that responsibility has heredity factor.

Further aspect of researches about relationship between dermatoglyphics and psychological properties demands to study diagnostic possibilities of dermatoglyphics. Although scientists on Behaviour Genetics have more possibility to discover relationship between genes and behaviour mainly in points of personal traits, the psychologists also can study heredity bases of the psychological traits by help usage of dermatoglyphics. It is not difficult to study dermatoglyphic signs for any psychologists, because it does not depend on having special diploma.

## Conclusion

To summarize, we can underline that the trait responsibility of person has moderate heredity base. It is reflected on the both hands' dermatoglyphics. Degree of responsibility connected in direct ratio with dermatoglyphic sign as t′ (axial triradius) of right and left hand. Axial triradius t of the both hands, on the contrary, connected with responsibility in inverse proportion. Diagnostic possibility of dermatoglyphics in estimation heredity bases of any personal trait concerning each individual must be further studied. Formation of the trait responsibility that has moderate heredity base depends on environment and upbringing to some extent.

ISSN 1512-1801

**References**


1. Tronto, J. (1993). Moral Boundaries. *London: Routledge.*
2. Schlenker, B.R., Britt, T.W., Pennington, J., Murphy, R. & Doherty, K. (1994). The triangle model of responsibility. *Psychological Review., 101, 4,* 632-52.
3. Raffoul, F. (2010). The origins of responsibility. *Indiana University Press.* 360 p.
4. Rhéaume, J. et al. (1994). Inflated responsibility in obsessive-compulsive disorder: Psychometric studies of a semiidiographic measure. *Journal of Psychopathology and Behavioral Assessment. Tom 16, 4,* 265-276.
5. Raatma, L. (2001). Responsibility. 24 p.
6. Shoemaker, D. (2015). Oxford Studies in Agency and Responsibility: Том 3, OUP Oxford, 288p.
7. Clarke, R., Mc.Kenna, M., & Smith, A. (2015). The Nature of Moral Responsibility: New Essays. *Oxford University Press.* 320 p.
8. Seligman, C., Olson, J., & Zanna, M. (2013). The Psychology of Values: The Ontario Symposium, Tom 8, 360 p.
9. Weiner, B., (1995). Judgments of Responsibility: A Foundation for a Theory of Social Conduct. *Guilford Press.* 301 p.
10. Leary, T. (1957). Interpersonal Diagnosis of Personality. New York: Ronald Press.
11. Cattell, H.E. & Schuerger, J.M. (2003). Essentials of the 16PF. New York: John Wiley & Sons.
12. Turkhemer, E. (2000). Three Laws of Behavior Genetics and What They Mean. *Current directions in Psychological science. Vol. 9, 5,* 160-164.
13. Akbarova, S.N. (2014 b). Heredity regularity of psychological properties of person. *Teoretičeskaâ I prikladnaâ nauka,10,*132-134.
14. Akbarova, S.N. (2015). Shakhs kharacterining tashqi belgilari [External signs of character of the person], *Tashkent: MChJ "Fan va ta'lim poligraf"*. 143 p.
15. Akbarova, S.N., & Matveeva, A.A. (2014). Hereditary reflection of preconditions of aggression of the person. *Topical Issues of Humanities & Social Sciences, 34,* 103-105.
16. Akbarova, S.N. (2014 c). Hereditary reflection of volition of the person. *GESJ: Education Sciences and psychology, 30,* 20-23.
17. Akbarova, S.N., & Nurkhodjaev, S.N. (2015). Hereditary signs of rudeness of men. *GESJ: Education Science and Psychology,4,* 82-86.
18. Zaletayeva, T.A. (1976). Dermatoglifika kak metod issledovaniya v meditsinskoy genetike. [Dermatoglyphics as a research method in medical genetics]. *Moskva: TsOLIUV, (Chapter 1).*
19. Akbarova, S.N. (2014 a). Dermatoglyphics analyze of psychological phenomena. *Vestnik of Tajik Technical University, 25,*142-144.
20. Gladkova, T.D. (1966). Kojniye uzori kisti i stopi obezyan i cheloveka.[Skin patterns of a brush and foot of the person and monkeys] *Moskva: Nauka, (chapter 1).*
21. Urbah, V.Yu. (1963). Matematicheskaya statistika dlya biologov i medikov. [The mathematical statistics for biologists and physicians]. *Moskva: iz-vo Acad. Nauk SSSR, (Chapter 4).*
22. Buss, A., & Plomin, R. (2014). Temperament (PLE: Emotion): Early Developing Personality Traits. *Psychology Press.* 196 p.
23. Thomas, J. & Bouchard, Jr. (2004). Genetic Influence on Human Psychological Traits. *Current directions in Psychological science. Vol. 13,4,* 148-151.
24. Bodnar, L.E. (2007). Gender Differences in Psychological Responsibility for Children. *American University.* 71 p.
25. Penke, L., Denissen, J., & Miller, G. (2007). The Evolutionary Genetics of Personality. *European Journal of Personality.* DOI: 10.1002/per.629
26. Bouchard, T.J., Lykken, D.T., Gue, M.Mc, Segal, N.L., & Tellegen, A. (1990). Sources of human psychological differences: the Minnesota Study of Twin Reared Apart. *Science. Vol. 250 no. 4978.* 223-228.

ISSN 1512-1801

27. Wu, N., Shang, S. And Su Y., (2015). The arginine vasopressin V1b receptor gene and prosociality: Mediation role of emotional empathy. PsyCh Journal, 4: 160-165. doi: 10.1002/pchj.102
28. Акбарова С.Н. Мардлик хусусиятининг келиб чиқиши. Ж. "Халқ таълими".
a. Тошкент, 2003. 6-сон, 69-71 б.

Article received: 2016-10-27