

## INDIVIDUAL PROFILE OF ASYMMETRY AS A FACTOR DEFINING FEATURES OF PERSONALITY

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### ABSTRACT

In given article the features of interrelation of an individual profile of functional asymmetry (IPFA) with ways of reaction and a concentration of attention (extraversion-introversion), with features of gathering information (sensation-intuition), decision-making (thinking-feeling) and with ways of the organization of interaction with surrounding world (judgment-perception) are investigated. Subjects of the research were 357 pupils of the Academic lyceum of computer technologies at Tashkent state technical university named after Beruni. The research program has included following techniques: 1) technique of definition IPFA and 2) Myers-Briggs Type Indicator (MBTI). Results of the research as a whole have shown that IPFA is possibly one of the important factors defining ways of reaction and a concentration of attention, gathering of the information, decision-making and the organization of interaction with surrounding world.

**Keywords:** Functional asymmetry, individual profile of functional asymmetry, extroversion, introversion.

### INTRODUCTION

The study of functional asymmetries in human brain is one of the most important problems of modern psychology. Features of neuropsychological organization of the brain and the individual differences determined by it were subsequently confirmed by most of researchers.

### LITERATURE REVIEW

The study of individual-typological features in their interrelation with functional asymmetries of the brain is an actual problem, since knowledge of the brain mechanisms of psychological differences can not only enrich the notion of individual differences in the psyche, but also provide significant assistance, for example, in education, to enrich and intensify the process training, as well as in solving complex issues of career guidance and differential diagnostic problems, etc.

The object of this research is to study the relationship between the individual profile of functional asymmetry (IPFA) with the ways of responding and focusing, the features of information gathering, decision-making and ways of organizing its interaction with the outside world.

### METHODOLOGY

The research program included the following psychodiagnostic techniques: 1) the method for determining IPFA [1], [2] and 2) MBTI - Myers-Briggs Type Indicator [3].

To identify the types of IPFA we used a special technique used by N.N.Bragina and T.A.Dobrokhotova [2]. In accordance with the content of the procedure, the subjects were presented with four functional tests, the performance of which allowed to determine the degree of preference for the hands or eyes of the subjects.

1. Interlace your fingers. On top was the thumb of the left hand (L) or right (R)? Write the result.
2. Aim at an invisible target... If for this you use the left eye closing the right one, write the letter "L", if on the contrary - "R".
3. Be in the pose of Napoleon, crossing your arms over your chest. Which hand was on top?
4. Try to portray a storm of applause. Which palm was on top?

Based on various combinations of signs of asymmetry 16 mini-portraits of brief generalized psychological characteristics are outlined which are given below.

1. RRRR ("full right-handedness"): only right asymmetries: conservatism, orientation to common opinion (stereotype); such people do not like to conflict, argue, quarrel.
2. RRRL: the most striking feature of the character is indecision.
3. RRLR: coquetry, determination, sense of humor, artistry, a very contact type of character, more common among women.
4. RRL: a rare combination; the character is close to the previous, but softer; there is some contradiction between indecision (left applause) and hardness of character: leading eye's right.
5. RLRR: analytical mind and softness; more common among women; slow habituation, caution in relationships, tolerance and some coldness.
6. RLRL: the rarest combination; defenselessness, exposure to various influences; more common among women.
7. LRRR: A very frequent combination; emotionality; Insufficient perseverance in the main issues; give in to male influence that allows adapting to different conditions; happy with friends and easily meet people.
8. LRRL: greater than the previous types, softness of character, naivety.
9. LLRR: friendliness and simplicity; some diffuse interests and a tendency to introspection.
10. LLRL: simple-mindedness, gentleness, gullibility.
11. LLLR: emotionality, vigor and determination.

12. LLLL ("full left-handedness"): an anti-conservative type of character; the ability to look at old things in a new way; the greatest emotionality, individuality, selfishness, stubbornness sometimes turning into isolation.

13. LRLR: the strongest type of character; they hardly change their point of view; energetic, persistently achieve the set goals.

14. LRLL: similar to the character of the previous type, instability, propensity to introspection; they find it hard to make new friends.

15. RLLR: light character; they are able to avoid conflicts and easily find friends; often change their hobbies.

16. RLLL: inconstancy and independence; desire to do everything yourself.

Myers-Briggs Type Indicator (MBTI) consists of 94 items and is based on the identification of two different ways of replenishing the energy reserve (extroversion-introversion scale), two opposite ways of collecting information (the sensory-intuition scale), two different ways of making decisions (thinking-feeling scale) and two different ways of organizing their interaction with the outside world (decision-perception). Thus, there are four basic scales of predispositions.

357 students of the Academic Lyceum of Computer Technologies at the Tashkent State Technical University named after Beruni were the subject of this study.

## RESULTS

The nonparametric Mann-Whitney test was chosen to compare two independent samples in order to compare the severity of the Myers-Briggs type indicator (MBTI) scales by individual profile of functional asymmetry (IPFA) types. For the preliminary consideration of intergroup differences, the mean values of each group are presented in graphical form.

According to the figures in Figure 1, representatives of the groups LRLL, RRRR, RLLR, RLRL and LRLR have higher indicators on the scale "Extroversion-introversion". However, statistically significant differences were found only between the groups of LRLR and LLRR ( $U=137.5$ ,  $p<0.05$ ), as well as between the groups of RRRR and LLRR ( $U=313.0$ ,  $p<0.05$ ). Despite more contrasting differences in mean values, there were no statistically significant differences between the indices of the other groups. Perhaps this is due to the insufficient number of subjects in these samples. On the basis of the above results it can be concluded that such types of IPFA as the RRRR and LRLR differ in brighter extroversion, and the LLRR profile, on the contrary, as introverted.

Figure 2 shows that the representatives of the LRLL, RLLR and RRRL groups have relatively high scores on "Path of sensations - path of intuition" scale. However, statistically significant differences were found only between the RRRL and LLLL groups ( $U=31.5$ ,  $p<0.05$ ), as well as between the groups of RRLR and LRLL ( $U=56.0$ ,  $p<0.05$ ). There were no statistically significant differences between the indices of other groups. Presumably, such a result can also be explained with an insufficient number of subjects in these samples. It turns out that representatives of such IPFA types as RRRL and LRLL differ in their desire to make maximum use of the data of the five senses in order to understand what is really going on

around, especially for accurate assessment of the situation. They are more absorbed by the real world around them, and images and ideas that they cannot "touch" do not attract their attention.

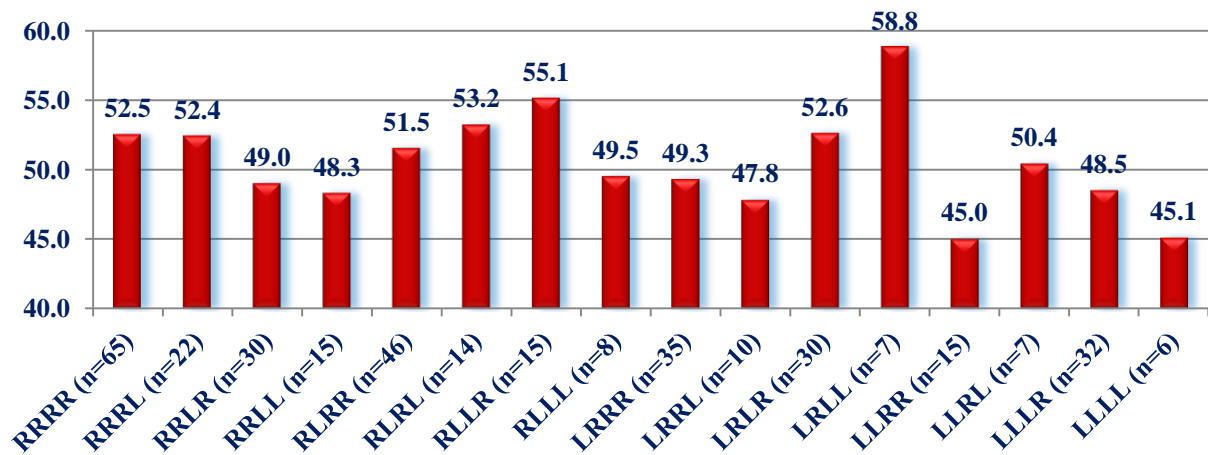


Fig.1. The average values on the scale "Extroversion-introversion" in groups with different types of IPFA.

Representatives of RRLR and LLLL groups which have comparatively low values on this scale, differ in their propensity to perceive the surrounding world through their conscious or unconscious associations and representations. They seek to go beyond the immediate given and known - to understand meanings, connections and attitudes using their intuition.

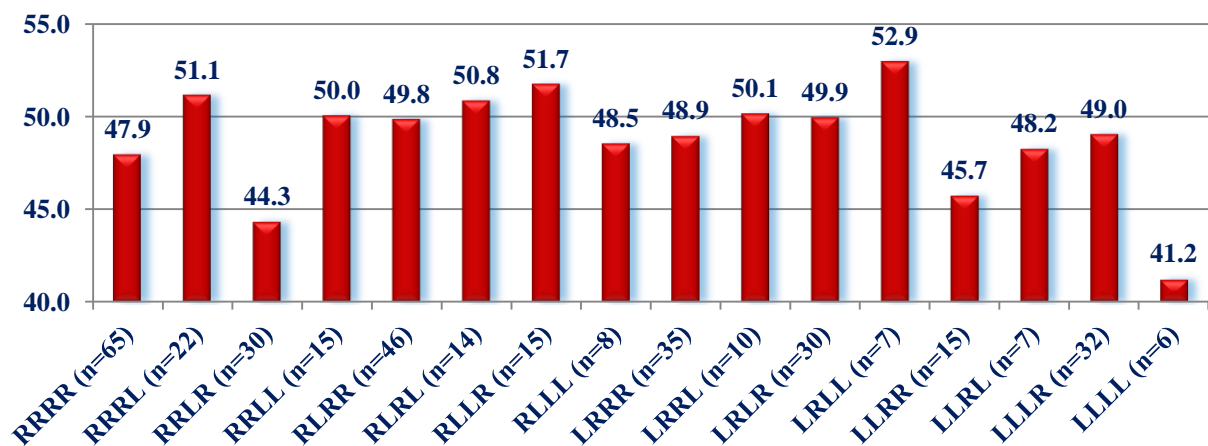


Fig.2. The average values on the scale "Path of sensations - the path of intuition" in groups with different types of IPFA.

Perhaps the most contrasting were the differences between the types of IPFA on the scale "Orientation to thinking - orientation to feelings, emotions" (see Figure 3). Quite high indicators for this scale are noted in the LLLL and RRLR groups. The least high degree of indicators on the scale "Orientation to thinking - orientation to feelings, emotions" are observed in representatives of LRRL and RRL groups. Statistically significant differences were found between the groups of LRRL and LLLL ( $U=9.0$ ,  $p<0.05$ ), RRLR ( $U=76.5$ ;  $p<0.05$ ), RLLL ( $U=18.0$ ;  $p<0.05$ ). Indicators on the scale "Orientation to thinking - orientation to feelings, emotions" in the LLLL group were statistically significantly high in comparison with representatives of RRLR ( $U=15.0$ ,  $p<0.05$ ) and LLRR groups ( $U=123.0$ ;

p<0.05). Finally, representatives of the RRLR group also have statistically significant high scores on the scale "Orientation to Thinking - Orientation to Feelings, Emotions" as compared with representatives of the RRL (U=123.0, p<0.05) and LRRR groups (U=343.0; p<0.05).

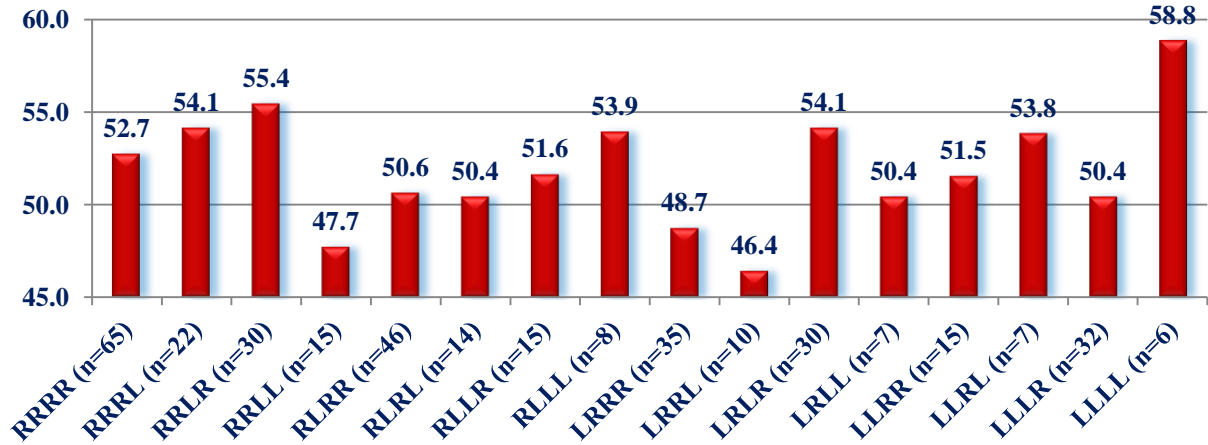


Fig.3. The average values on the scale "Orientation to thinking - orientation to feelings, emotions" in groups with different types of IPFA.

Summarizing the results obtained it can be noted that in representatives of the LLLL, RRLR, and RLLL groups thinking is predominant process which predict the logical consequences of a particular development of events. The evaluation is based on objective analysis of situation, causes and effects, facts, including unpleasant ones; to judge what is right and what is not, objective criteria are being sought. When making a decision, they try to be logical, unbiased, analyze the situation and are guided by objective values.

Representatives of groups LRRL, RRL and LRRR when working with information proceed from its personal significance and meaning for themselves and others. When making a decision they focus on the values of people, and not on abstract logic, take into account how this decision will affect people. They like to deal with people, take on their problems. The main value for them are subjective values.

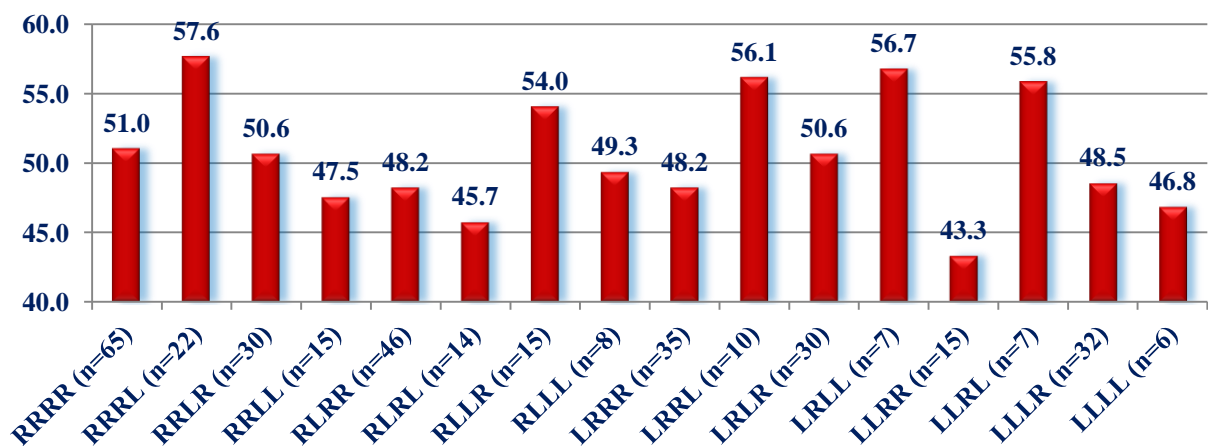


Fig.4. The average values on the scale "Decision, the tendency to make judgments - perception, a tendency to contemplate" in groups with different types of IPFA.

Figure 4 shows the averages on the scale "Decision, the tendency to make judgments - perception, inclination to a contemplative position" in groups with different types of IPFA. It can be seen that the representatives of the groups of RRRL, LRL, LRRL and LLRL have the highest average values on this scale. Low values on the scale "Decision, the tendency to make judgments - perception, inclination to a contemplative position" are in the groups of LLRR, RLRL, RLL, RLRR, LRRR.

Representatives of the RRRL group have statistically significant high scores on the scale "Decision, the tendency to make judgments - perception, inclination to a contemplative position" in comparison with representatives of types of LLRR ( $U=71.0$ ,  $p<0.01$ ), RLRL ( $U=86.0$ ;  $p<0.05$ ), RLL ( $U=102.5$ ,  $p<0.05$ ), RLRR ( $U=338.5$ ,  $p<0.05$ ). On the other hand, the LLRR group has statistically significant low scores on the scale in comparison with the types of LRL ( $U=23.5$ ,  $p<0.05$ ), LRRL ( $U=27.0$ ,  $p<0.01$ ) and LLRL ( $U=24.5$ ,  $p<0.05$ ).

## DISCUSSION

Thus, it can be assumed that the representatives of the RRRL, LRL, LRRL, LLRL groups are most likely to live in a planned, structured, orderly way, they have a need to regulate life and control it, like certainty, prefer to make a decision and execute it, are result-oriented and prefer to evaluate and criticize, rather than absorb new information. Conversely, the representatives of the groups of LLRR, RLRL, RLL, RLRR tend to live flexibly and spontaneously, constantly collect information and are always ready to change their views. They want to understand life rather than control it, prefer to remain open to new experiences, trusting their ability to adapt to changes, enjoying the changes, and are more process-oriented than the result.

## CONCLUSIONS

So, in this study, we established the relationship of IPFA with the ways of response and concentration (extraversion-introversion), the features of information gathering (sensory-intuition), decision-making (thinking-feeling) and ways of organizing our interaction with the outside world (decision-perception).

Thus, representatives of the types of RRRR and LRLR turned out to be bright extroverts, whereas people with the LLRR profile are profoundly introverted. If representatives of types of RRRL and LRL in the collection of information mainly rely on their own sense organs, the representatives of the of RRLR and LLL groups rely mainly on their intuition, inner voice. In decision-making situations, the representatives of the RRLR, LLL and RLL groups proceed from the laws of rigorous logical reasoning, and representatives of the RLL, LRRR and LRRL groups are more oriented towards feelings and human values. The main way of organization of interaction with the surrounding world in representatives of LRRL, LLRL, RRRL and LRL groups is decision, making judgments. And the representatives of RLL, LLRR, RLRR and RLRL, on the contrary, are likely to differ in their propensity to perceive and contemplate position.

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