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FOUNDATIONS OF THE COGNITIVE CONCEPTION OF
PSYCHOLOGICAL TYPES

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Abstract

The paper reveals theoretical and methodological foundations of the cognitive concept of psychological types, based on the theory of Carl Jung in the framework of cognitive science. New terms are put into circulation within the framework of the cognitive concept. The following names were given to Jung's mental functions – the terms “logitive function”, “emotive function”, “intuitive function” and “sensitive function” are applied instead of the concepts “Thinking”, “Feeling”, “Intuitive”, and “Sensing.” Functions are distributed into two classes: the class of constructive functions and receptive functions. New names are proposed to designate the interest areas of the individual (Jung's attitudes): the concepts of “extraverted attitude” and “introverted attitude” are replaced by the terms “extraverted intentionality” and “endoververted intentionality.” Besides, a new definition of the “psychological type” concept is given. All mental functions are forms of information manifestation, and types of intentionality are a source of information: external (exoververted intentionality) and internal (endoververted intentionality). Terms such as dominant and subdominant functions, as well as basic functions and subsidiary functions, are introduced into circulation. It is stated that each type includes two dominant functions (constructive and receptive), one of which occupies the position of the basic function, and the other – the position of the subsidiary one. The outcome is 16 complicated psychological types. The field principle of describing the psychological type is briefly presented in terms of core and periphery. The obtained formula calculates the brightness coefficient of each function.

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1. Introduction

The book “Psychological Types”, in which the Swiss psychiatrist and psychologist Carl Jung (1875–1961) presented the results of his perennial psychological observations (Jung, 2001), was published in Zurich in 1921.

Jung created the concept of psychological types, which claimed to explain certain aspects of human behaviour, in particular, the processes of making certain decisions.

Carl Jung, in the process of observation, noticed some typical variability between people: some are more inclined to unravel hidden possibilities; others are limited to the perception of specific subjects and objects. It is significant for some people to comprehend the situation intellectually, and it is enough to be guided by sensory impressions for others. The fate of some people is determined by own subjective interests, while others are defined by external objects.

Jung worked out a classification of eight psychological types, identifying groups of contrarian mental mechanisms: two attitudes – extraverted/introverted, as well as four psychological functions, divided into two classes – a class of rational functions (thinking/feeling) and a class of irrational functions (sensation/intuition).

The given mechanisms are inherent in each person. However, Jung notes, “since we all, to a certain extent, deviate in one direction or another, we naturally always tend to understand everything in the sense of our type”, that is, the type is formed in a situation where some mechanisms predominate over others (Jung, 2001).

For instance, the dominance of the “thinking” rational function (simplistically, the “thinking type” makes a decision on the basis of intellectual, logical conclusions) is characteristic of the thinking type, and for the intuitive type – the irrational function of intuition, etc.

The development of Jungian Psychological Types Theory took place in two directions, which can be conditionally called “western” and “eastern.”

The “western” direction was formed in the works of American researchers Katharine Cook Briggs and Isabel Briggs Myers (2014), who have been popularizing Jung’s typology in the United States for 40 years.

The “eastern” direction is represented by the Soviet researcher works from Lithuania Aushra Augustinavichute (1997).

She evolved and supplemented many provisions of the Jungian Psychological Types Theory, using, in particular, the modeling method. Model “A”, named after Aushra, is often applied to describe the types in her concept, becoming a solid foundation for the given typology variant.

Currently, Jungian Psychological Types Theory is being elaborating in scientists’ papers and is used in applied and fundamental scientific research (Blass & Hackston, 2008; Hernández-Hernández et al., 2017; Hewett & Hallman, 2018; Pearson & Dollinger, 2004; Tieger & Barron-Tieger, 2011).

2. Problem Statement

The Briggs-Briggs Myers concept and the Aushra Augustinavichute concept have certain shortcomings, namely, the lack of clear terminology and precise definitions of the theory basic concepts.

One of the most fundamental problems of the Aushra Augustinavichiute concept is the lack of a unified and reliable methodology for defining psychological types.

The scientists of Moscow International University on the basis of the Department of Psychology and the “Laboratory of Cognitive Research of Consciousness” have worked out cognitive concept of psychological types, within which a new terminology, new definitions and a model of psychological type are proposed.

3. Research Questions

The research question is the cognitive conception of psychological types, created on the basis of the Jungian Psychological Types Theory within the framework of cognitive science.

4. Purpose of the Study

The purpose of the paper is to explain theoretical and methodological foundations of the cognitive concept of psychological types.

5. Research Methods

The study was carried out using both traditional and modern methods (historical, systemic, structural-functional, and comparative).

The modeling method is also used.

6. Findings

The new terminology is developed within the framework of the cognitive concept: new names are given to mental functions, classes of mental functions, attitudes and, ultimately, psychological types.

6.1. New terminology

6.1.1. Mental functions and classes of mental functions

It is known that Jung experimentally discovered two pairs of mental functions: a) a pair of rational mental functions – “thinking”-“feelings”; b) a pair of irrational mental functions – “feeling”-“intuition.”

New names of Jung’s mental functions are proposed within the framework of our concept: *logical function (L function)*, *emotive (E function)*, *sensitive function (S function)*, and *intuitive function (I function)*.

Besides, the authors introduce the concepts of “receptive functions” (from the Latin “reception”) and “constructive functions” (from the Latin “constructivus”) instead of the terms “rational functions” and “irrational functions”, which are vague and can lead scientific thought astray.

Therefore, mental functions are divided into two classes:

- class of receptive functions: S-function, I-function.
- class of constructive functions: L-function and E-function.

6.1.2. Types of attitudes

Carl Jung singled out the extraverted and introverted types of attitude.

He associated types of attitudes with the concept of “libido” (psychic energy).

The extraverted type of attitude is the orientation of libido (psychic energy) to the outside world (outside), and the introverted attitude implies the orientation of libido to the subject’s inner world.

However, “libido” (“psychic energy”) is excluded from our terminological apparatus, since it is vague and speculative in its content, and also more corresponds to the foundations of psychoanalysis.

We correlate the direction of the individual's interest with the concept of *intentionality*.

Intentionality is the ability of consciousness to relate to objects in one way or another.

We distinguish two types of consciousness intentionality.

- 1) if there is a positive attitude towards objects, we mean *exoverted intentionality*.
- 2) if, on the contrary, there is a negative attitude towards objects, we mean *endoverted intentionality*.

A person with predominant exoverted intentionality – *exovert*, asserts the meaning of objects, since he constantly orients his subjective attitude towards an external object and introduces it in relation to him (Jung, 2001).

A person with predominant endoverted intentionality – *endovert*, on the contrary, is concerned with distracting his consciousness from objects, as if he had to protect himself from the excessive power of the object (Jung, 2001).

The replacement of the terms “extraverted”/“introverted” by “exoverted”/“endoverted” is due to the fact that the concepts of extraversion and introversion have now become ambiguous.

They were introduced into scientific circulation by K. Jung, but later gained new interpretations in the works of G. Eysenck (within the framework of the personality dispositional model), K. Leonhard (within the framework of the personality accentuation concept), and etc. The above interpretations do not quite correspond to what how Jung comprehends extraversion and introversion.

Therefore, we propose to operate with new terms: *exoversion* will strictly mean the direction of consciousness (intentionality) towards objects, and *endoversion* – the direction of consciousness (intentionality) towards the subject (that is, turning towards oneself, towards internal mental reality).

In this case, the terms “extraversion” and “introversion” can be used in psychological discourse in the sense Eysenck used them – as a degree of sociability.

Types of intentionality are denoted by signs: exoverted intentionality is marked with a “+” sign (outward orientation), and endoverted intentionality is indicated with a “-” sign (inward orientation, avoidance of external objects).

For example, the E function with the “+” sign (E+) means the focus of consciousness on active interaction with people, a direct impact on their emotional state, a change in their ethical attitudes, etc.

E function with the “-” sign (E-) implies the focus of consciousness on own experiences, feelings, mental states, and personal values and personal attitude to external reality.

6.2. New definitions

We have also given new definitions to basic concepts of the psychological type’s theory.

6.2.1. Mental function

Jung defines mental function as a form of psychic activity that remains equal to itself in various situations.

Since Jung associates mental function with the concept of “libido” (“psychic energy”), then it (psychic function) is a form of libido manifestation at a certain energy level.

However, the concept of “libido” (“psychic energy”) is excluded from our terminological apparatus, since it is vague and speculative in its content, and more corresponds to the foundations of psychoanalysis.

Since our concept is designed within the framework of the cognitive paradigm, the description of mental functions is based on the category of “information”, which, along with such categories as “substance” and “energy”, is one of the fundamental ones in contemporary science.

The term “information” is actively applied in the social and humanitarian, mathematical, technical and natural sciences (biology, linguistics, psychology, etc.), but simultaneously has a wide range of diverse interpretations.

There is no strict and universal definition of information.

“Information” means a set of data on external (objects) and internal (subjective states) reality, as well as the processes taking place in it, which can be perceived, transformed, transmitted and stored in memory in a certain way (working definition).

Thus, mental function is a form of information manifestation (working definitions) (see Table 1):

a) S function – a receptive mental function associated with the reception, transformation, transmission and storage of information about the specific properties of objects (S+) and the state of the body internal environment (S–).

b) I function – a receptive mental function associated with the reception, transformation and transmission of information about the potential capabilities of objects (I +) and subjective images (I–).

c) L function – a constructive mental function associated with the reception, transformation, transmission and storage of information about external (L+) and internal (L–) objective patterns and processes.

d) E function – a constructive mental function associated with the perception, transformation, transmission and storage of information about feelings, emotional states and values manifested in the act of communication (E+) or in the process of self-reflection (E–).

Table 1. Table of mental functions

Intentionality/function classes	Receptive functions	Constructive functions
Exoverted	Sensitive function (S+)	Logitive function (L+)
	Intuitive function (I+)	Emotive function (E+)
Endoverted	Sensitive function (S-)	Logitive function (L-)
	Intuitive function (I-)	Emotive function (E-)

6.2.2. Psychological types: the simplest

According to Jung, the psychological type is formed in the case of the predominance of some functions and attitudes over others.

Jung defines the predominant function as the most differentiated, conscious and valuable.

Jung uses the concepts of “conscious” and “unconscious”, which are excluded from the discussed concept.

In our concept, a psychological type is a cognitive system of acceptance (receiving), transforming (processing), transmitting and storing information (its various forms), which has mind and will. The last part of the definition – “possession of mind and will”, allows distinguishing the psychological type from other types of systems (for example, technical ones).

If the S function is predominant (habitual, most differentiated), then two variants of the sensitive type (or S type) are obtained: the sensitive exovert (S+) and the sensitive endovert (S-).

Generally, we obtain a model with eight psychological types (Table 02).

The types are the simplest, since they are formed only on the basis of one predominant mental function.

Table 2. Table with the simplest psychological types

Intentionality	Receptive types	Constructive types
Exoverts	Sensitive exovert (S+)	Logitive exovert (L+)
	Intuitive exovert (I+)	Emotive exovert (E+)
Endoverts	Sensitive endovert (S-)	Logitive endovert (L-)
	Intuitive endovert (I-)	Emotive endovert (E-)

6.2.3. Complicated psychological types.

Firstly, complicated psychological types are designated by two predominant functions, one of which is a receptive function, and the second is a constructive function.

The term “dominant functions” is applied in our concept to refer to the predominant functions.

Dominant functions are the strongest functions that process information in the most differentiated way and in large volumes.

Accordingly, *subdominant functions* are the least strong functions.

Secondly, complicated types have two dominant functions, and they occupy diverse positions: one takes the position of the base function, and the other takes the position of the subsidiary.

The concepts of “main function” and “auxiliary function” are used in Jung’s concept.

The main (leading) function is always more differentiated than the rest, which also have somewhat infantile and primitive properties (Jung, 2001). The weakest function is the opposite of the strongest (leading) one. The strongest function is among the two auxiliary functions.

The terms “basic” and “subsidiary” positions are the most appropriate within our concept.

For instance, a type in which the dominant S+ occupies the basic position, and the dominant E+ takes the subsidiary position, is a receptive sensitive-emotive exovert (S+ E+).

If, on the contrary, E+ is basic, and S+ is subsidiary, then we get a constructive emotive-sensitive exovert S+ (E+).

Basic and subsidiary positions can be occupied by both dominant and subdominant functions.

The dominant function in the basic position is the most powerful function. If the power of each function is evaluated on a four-point scale, then the dominant function in the basic position has 4 points.

The dominant function in a subsidiary position is an auxiliary dominant function, and has a power of 3 points.

The subdominant function in the basic position has a power of 2 points, and the subdominant function in the subsidiary position has a power of 1 point (it is the weakest).

The result is 16 complex psychological types (Table 03).

Table 3. Table with complex psychological types

Intentionality	Receptive types	Constructive types
Exoverts	Sensitive-logitive exovert receptive (S+) L+	Sensitive-logitive exovert constructive S+ (L+)
	Intuitive-emotive exovert receptive (I+) E+	Intuitive-emotive exovert constructive I+ (E+)
	Sensitive-emotive exovert receptive (S+) E+	Sensitive-emotive exovert constructive S+ (E+)
	Intuitive-logitive exovert (I+) L+	Intuitive-logitive exovert constructive I+ (L+)
Endoverts	Sensitive-emotive endovert receptive (S-)E-	Sensitive-emotive endovert constructive S-(E-)
	Intuitive-logitive endovert receptive (I-)L-	Intuitive-logitive endovert constructive I-(L-)
	Intuitive-emotive endovert receptive (I-)E-	Intuitive-emotive endovert constructive I-(E-)
	Sensitive-logitive endovert receptive (S-) L-	Logitive-sensitive endovert constructive S- (L-)

Two dominant (S+ and S-) and two subdominant (I+ and I-) will be basic for a sensitive-logitive exovert.

Accordingly, subsidiary functions are of an auxiliary (instrumental) nature. Two dominant (L+ and L) and two subdominant (E+ and E-) will be subsidiary for a sensitive-logitive exovert.

6.3. Field model of complicated psychological types (F model)

Jung is right in stating that the basic psychological functions in the same individual are seldom or almost never of the same strength or of the same degree of evolution. Generally, one of the functions has preponderance both in the development and strength (Jung, 2001).

Myers and Briggs Myers talk about preferences: one function is preferred over another.

The strength of functions within the framework of the developed field model (F model) is proposed to be determined by their brightness degree in the field system.

The brightness coefficient, which will be calculated by dividing the number of positive responses for a function in the test by the total number of responses for the same function, is proposed to measure strength.

For example, 7 positive responses to S and only 3 to I are obtained in a 10-question test to reveal the brightness degree of receptive functions.

The test for defining the brightness degree of constructive functions from 10 questions demonstrates the following outcomes: 8 positive responses to L function and two positive responses to E function.

The brightness coefficient of S function is equal to 0.7 (7/10) and the brightness coefficient of I function is 0.3 (3/10).

The brightness coefficient of L function equals 0.8, and the brightness coefficient of E function is 0.2.

The psyche of the model is presented as a field with a core and periphery: the brightest functions occupy the core, and the least bright ones go to the field periphery (see Figure 1–4).

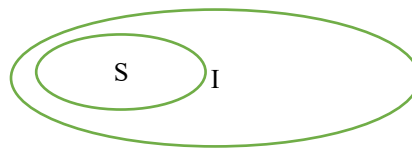


Figure 1. Field of receptive functions with core and periphery

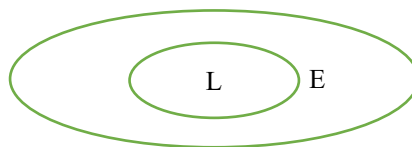


Figure 2. Field of constructive functions with core and periphery

It is required to define the intentionality type in order to understand the direction of dominant functions.

We calculate the intentionality type in the same way as the brightness coefficient of functions.

We assume that a test for identifying the intentionality type of 10 questions gives 6 positive for exoversion and 4 for endoversion.

We calculate the brightness coefficient: exoversion (0.6) – endoversion (0.4).

Next, we conduct a test to identify receptivity – constructiveness.

We suppose that the brightness coefficient of receptivity = 0.6, and constructiveness = 0.4.

We obtain that the sensitive-logitive receptive exovert is revealed according to the test outcomes.

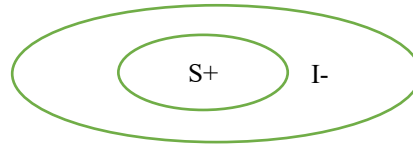
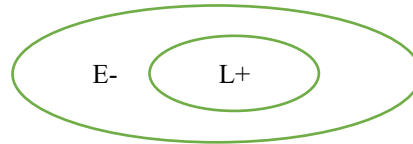


Figure 3. Field of receptive functions with a core and periphery, considering the intentionality type



Field of constructive functions with a core and periphery, considering the intentionality type

Therefore, S+ and L+ functions are dominant and occupy the core of the field.

Consequently, I- and S- occupy the field periphery; these are the weakest functions.

7. Conclusion

The paper reveals the theoretical and methodological foundations of the cognitive concept of psychological types, within which a new terminology has been worked out, definitions to the theory main concepts have been given, and a field model (F model) has been proposed, which allows defining the strength of mental functions and their intentionality.

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