

## **Develop and use a data collection systems for assessing and monitoring the psychological and physical status of school-children**

Data collection system for assessing and monitoring psychological status of school-children is based on Jung - Meyers/Briggs Typology (<http://www.ship.edu/~cgboeree/jung.html>) and the theory of information metabolism developed in Russia under the name of "Socionics" by Aušra Augustinavichute [1] - [5].

Karl Jung saw universal "types" in human personality. These types are all present in all of us but there tends to be one predominant type or normal mode of organizing our experience. The types are both complementary and competitive. One can gain insight into oneself and others by understanding the structure that Jung described but one must not interpret it too narrowly or literally. The reality that underlies this simple intellectual model is far more complex and problematic than any description of it can suggest.

Jung's personality typology begins with the distinction between **introversion** and **extroversion**. Introverts are people who prefer their internal world of thoughts, feelings, fantasies, dreams, and so on, while extroverts prefer the external world of things and people and activities.

The words have become confused with ideas like shyness and sociability, partially because introverts tend to be shy and extroverts tend to be sociable. But Jung intended for them to refer more to whether you ("ego") more often faced toward the persona and outer reality, or toward the collective unconscious and its archetypes. In that sense, the introvert is somewhat more mature than the extrovert is. Our culture, of course, values the extrovert much more.

Whether we are introverts or extroverts, we need to deal with the world, inner and outer. And each of us has our preferred ways of dealing with it, ways we are comfortable with and good at. Jung suggests there are four basic ways, or **functions**:

The first is **sensing**. Sensing means what it says: getting information by means of the senses. A sensing person is good at looking and listening and generally getting to know the world. Jung called this one of the **irrational** functions, meaning that it involved perception rather than judging of information.

The second is **thinking**. Thinking means evaluating information or ideas rationally, logically. Jung called this a **rational** function, meaning that it involves decision making or judging, rather than simple intake of information.

The third is **intuiting**. Intuiting is a kind of perception that works outside of the usual conscious processes. It is irrational or perceptual, like sensing, but comes from the complex integration of large amounts of information, rather than simple seeing or hearing. Jung said it was like seeing around corners.

The fourth is **feeling**. Feeling, like thinking, is a matter of evaluating information, this time by weighing one's overall, emotional response. Jung calls it rational, obviously not in the usual sense of the word.

We all have these functions. We just have them in different proportions, you might say. Each of us has a **superior** function, which we prefer and which is best developed in us, a **secondary** function, which we are aware of and use in support of our superior function, a **tertiary** function, which is only slightly less developed but not terribly conscious, and an **inferior** function, which is poorly developed and so unconscious that we might deny its existence in ourselves.

Katharine Briggs and her daughter Isabel Briggs Myers found Jung's types and functions so revealing of people's personalities that they decided to develop a paper-and-pencil test. It came to be called the **Myers-Briggs Type Indicator**, and is one of the most popular, and most studied, tests around.

The test has four scales. **Extroversion - Introversion** (E-I) is the most important. Test researchers have found that about 75 % of the population are extroverted.

The next one is **Sensing - Intuiting** (S-N), with about 75 % of the population sensing.

The next is **Thinking - Feeling** (T-F). Although these are distributed evenly through the population, researchers have found that two-thirds of men are thinkers, while two-thirds of women are feelers. This might seem like stereotyping, but keep in mind that feeling and thinking are both valued equally by Jungians, and that one-third of men are feelers and one-third of women are thinkers. Note, though, that society does value thinking and feeling differently, and that feeling men and thinking women often have difficulties dealing with people's stereotyped expectations.

The last is **Judging - Perceiving** (J-P), not one of Jung's original dimensions. Myers and Briggs included this one in order to help determine which of a person's functions is superior. Generally, judging people are more careful, perhaps inhibited, in their lives. Perceiving people tend to be more spontaneous, sometimes careless. If you are an extrovert and a "J," you are a thinker or feeler, whichever is stronger. Extroverted and "P" means you are a senser or intuiter. On the other hand, an introvert with a high "J" score will be a senser or intuiter, while an introvert with a high "P" score will be a thinker or feeler. J and P are equally distributed in the population.

Four letters, such as ENFJ identify each type.

**ENFJ** (Extroverted feeling with intuiting): These people are easy speakers. They tend to idealize their friends. They make good parents, but have a tendency to allow themselves to be used. They make good therapists, teachers, executives, and salespeople.

**ENFP** (Extroverted intuiting with feeling): These people love novelty and surprises. They are big on emotions and expression. They are susceptible to muscle tension and tend to be hyperalert. They tend to feel self-conscious. They are good at sales, advertising, politics, and acting.

**ENTJ** (Extroverted thinking with intuiting): In charge at home, they expect a lot from spouses and kids. They like organization and structure and tend to make good executives and administrators.

**ENTP** (Extroverted intuiting with thinking): These are lively people, not humdrum or orderly. As mates, they are a little dangerous, especially economically. They are good at analysis and make good entrepreneurs. They do tend to play at oneupmanship.

**ESFJ** (Extroverted feeling with sensing): These people like harmony. They tend to have strong shoulds and should-nots. They may be dependent, first on parents and later on spouses. They wear their hearts on their sleeves and excel in service occupations involving personal contact.

**ESFP** (Extroverted sensing with feeling): Very generous and impulsive, they have a low tolerance for anxiety. They make good performers, they like public relations, and they love the phone. They should avoid scholarly pursuits, especially science.

**ESTJ** (Extroverted thinking with sensing): These are responsible mates and parents and are loyal to the workplace. They are realistic, down-to-earth, orderly, and love tradition. They often find themselves joining civic clubs!

**ESTP** (Extroverted sensing with thinking): These are action-oriented people, often sophisticated, sometimes ruthless -- our "James Bonds." As mates, they are exciting and charming, but they have trouble with commitment. They make good promoters, entrepreneurs, and con artists.

**INFJ** (Introverted intuiting with feeling): These are serious students and workers who really want to contribute. They are private and easily hurt. They make good spouses, but tend to be physically reserved. People often think they are psychic. They make good therapists, general practitioners, ministers, and so on.

**INFP** (Introverted feeling with intuiting): These people are idealistic, self-sacrificing, and somewhat cool or reserved. They are very family and home oriented, but don't relax well. You find them in psychology, architecture, and religion, but never in business. Both Jung and I admire this type.

**INTJ** (Introverted intuiting with thinking): These are the most independent of all types. They love logic and ideas and are drawn to scientific research. They can be rather single-minded, though.

**INTP** (Introverted thinking with intuiting): Faithful, preoccupied, and forgetful, these are the bookworms. They tend to be very precise in their use of language. They are good at logic and math and make good philosophers and theoretical scientists, but not writers or salespeople.

**ISFJ** (Introverted sensing with feeling): These people are service and work oriented. They may suffer from fatigue and tend to be attracted to troublemakers. They are good nurses, teachers, secretaries, general practitioners, librarians, middle managers, and housekeepers.

**ISFP** (Introverted feeling with sensing): They are shy and retiring, are not talkative, but like sensuous action. They like painting, drawing, sculpting, composing, dancing -- the arts generally -- and they like nature. They are not big on commitment.

**ISTJ** (Introverted sensing with thinking): These are dependable pillars of strength. They often try to reform their mates and other people. They make good bank examiners, auditors, accountants, tax examiners, supervisors in libraries and hospitals, business, home etc., and phys. ed. teachers, and boy or girl scouts!

**ISTP** (Introverted thinking with sensing): These people are action-oriented and fearless, and crave excitement. They are impulsive and dangerous to stop. They often like tools, instruments, and weapons, and often become technical experts. They are not interested in communications and are often incorrectly diagnosed as dyslexic or hyperactive. They tend to do badly in school.

Socionics could be regarded as further development of Jung - Meyers/Briggs Typology using the theory of information metabolism proposed by Polish psychologist and psychiatrist A. Kempinsky. This theory describes the interaction

between a person and his surroundings; the images built up by the person and the results of this interaction have an informational character. Just as the life of the body is dependent on the material (energetic) metabolism (the exchange with the environment by substance and energy, as well as the building of the body), the life of the human psyche is dependent on information metabolism. The information flow affecting a person is not homogeneous, but has a definite spectrum including logical, ethical, sensorical and intuitive components. Psychological functions are the particular abilities of a person to understand certain aspects of the world. These abilities give the images and notions that form a certain "grammar" of relationships between a person and the world including other persons. Nature permits these functions to develop differentially in everyone, along with reception and production of information. Each aspect of information flow corresponds with its own psychological function.

The scientific basis of Socionics was created in early 70-th of the XX century by Aušra Augustinavičute [1] - [5]. She created her own informational model of human mind actually known as the "A" (Aušra's 8-element) model. This allowed describing various aspects of personality thinking and behavior by representing personality as a type of informational metabolism (TIM) with indication of its strong and weak sides.

This implied the possibility of describing and forecasting not only behavior of IM types, but relationships between such types as well. These relationships are conditioned by informational exchange between identical IM functions located at different positions in the IM model of types. Such description is an advance in the sphere of sciences about human being.

There are 16 types of relationships, which emerge between 16 personality types in the process of communication; they range from the "conflict" to the most attractive one called "duality" (mutual complement). At the same time, the whole complex of IM types and their relationships makes an integral system - socion.

Large practical importance of socionics is obvious compared to the traditional psychology, which possesses descriptions (although incomplete) of personality types, but lacks descriptions and prognosis of human relationships. Thus it became possible to resolve problems of compatibility of partners in family, collectives and in business; to create steady, united groups for managing different tasks in any sphere of human activity.

The structure of the human mentality, which is reflected in types of mentality (types of information metabolism), is developed and described in effective models in socionics. The socionic description of mentality type gives deep understanding of thinking style, motivation and actions of the each person, strong and weak features of his mentality, ability to perceive and to process the various information, which he separates to different aspects of information flow. Therefore the socionic methods are applied to pedagogic. The features of the information assimilation are determined by type of mentality (or by psycho-informational type). Therefore socionics prompts the form of training and stimulating of the pupils, peculiarities of teaching methods for various type groups, advisability of those or other subjects teaching in the certain age. Socionics enables also **to form optimal educational groups**, the progress and discipline of the pupils considerably rise in a result.

Knowing socionic methods the teachers and tutors can effectively cooperate with the pupils both at a personal, and at a group level.

Socionics offers **new technologies for organization of educational process**, optimizing training. Thus it is possible to increase volume of educational material with simultaneous increase of its assimilation degree. Load on the pupil mentality is reduced because he works on most advanced mental (psycho-informational) functions and less advanced functions are reasonably training.

Thus, the application of socionic technologies in pedagogic enables **to intensify the training process** with complete development of the person of pupil in conditions of information explosion.

Knowing the bases of socionics parents can more adequately approach to educational process of their children, to determine their natural propensities. Socionics is used actively in work with the teenagers for the decision of their problems.

The knowledge of psycho-informational structure of a type allows proposing the reasonable recommendations **for professional orientation and professional suitability**.

The socionic methods not only describe structures of personal mentality, but also predict interactions and relation between the people. Socionics allocates 16 types of the relations — from most attractive and comfortable up to disputed. The understanding of a nature of these relations helps to solve a number of problems of the interpersonal relations, including aspects of psychological and sexual compatibility. The researches of married couples have shown that the family relations submit to the laws, which are opened by socionics. Socionic technologies are used in family consultation (relations between the parents, children, and problem of education etc.).

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Data collection systems for assessing and monitoring the physiological status of school-children is based on electropuncture diagnostics (electrical echo of Yin - Yang) using Computer Galvanopuncture Scanner (CGS).

The ElectroPuncture Diagnostics (EPD) is an example of successful co-operation of the ancient Oriental wisdom with the Western technological progress. The skin electro physiology has estimated the changes of electrical characteristics in definite areas of the skin depending on the illness of certain organs, on the status of sympathetic innervations of corresponding dermatomes, on the manifestation of agitation or suppression processes of the nervous system. But no earlier could electrometry become the basis of EPD, when special minute areas of the skin in most cases coinciding with the Biologically Active Points (BAP) and meridians of acupuncture that have low electrical resistance and high electro conductivity (I. E. H. Niboyet, 1955) were discovered.

The arsenal of electrometry has expanded from the registration of the skin-galvanic reflexes to countless variants of EPD.

The changes in the acupuncture points reflect subclinical stages of the illness, its acute and chronic processes as well as its dynamics, making it possible to identify the topic of the process, to control the course of the illness.

A.K. Podshibyakin has estimated that the BAP electric potentials are higher by 2 - 3 mV than in indifferent areas, but they vary markedly depending on internal conditions and external influences, such as air ionization, the Sun's activity etc.

In the case of acute inflammatory processes, the potentials greatly increase in corresponding BAP's. In the case of chronic processes, it decreases and then gets to normal in the periods of subsiding.

The Skin Electric Conductivity (SEC) of the BAP reflects the character and location of the process. During an acute process, it increases in the corresponding points, grows in the case of exacerbation, and returns to normal in the case of subsiding. Under normal conditions, the conductivity at the basic points of the meridian is higher than in auxiliary points. In the symmetrical points on the right and on the left of the body, the conductivity is the same. Besides the internal changes, the SEC reflects specific features of the skin (dryness, thickness, secretion of perspiration glandules) and external influences, like the time of the day, air temperature, and the conditions of recording.

A. T. Neborskii (1986) has carried out a clinical-experimental research in order to obtain clinical-physiological reasoning of the diagnostic information content of the skin electrometry for men and monkeys.

The priority results obtained by him were as follows:

- typical (specific, sexual, age, season, daily) characteristics of the Skin Electric Conductivity Profiles (SECP) along the acupuncture zones of the extremities for men and monkeys;

- variation of the SECP's under different functional conditions and influences;

- dynamics of SECP changes throughout the woman's menstrual cycle;

- comparison of vegetative reactivity according to the integral SECP characteristics and the principal parameters of central and peripheral homodynamic under various functional conditions;

- peculiarities of SECP daily and season biorhythmology for men and women;

- sensitivity of SECP characteristics in comparison with conventional clinical parameters (body temperature, blood pressure, pulse and breathing frequencies);

- a new syndrome of SEC lowering in the case of neurasthenia identified, its sexual differences and profound perversion of vegetative reactivity as to SECP established;

- correlation between the increasing SEC and indices of the central homodynamic (increasing heart throwing) while carrying research in the state of psychoemotional stress and endogenic stimulation of sympathetic-adrenal system.

It has been acknowledged as classics, the "Ryodoraku" registrations after Nakatani in 24 points, reflecting the condition of the 12 Chinese classical meridians and "heretical" Voll's registration of the SEC in the points proposed by the author. Wide-spread have become the modifications of the Voll's method such as automatic registration in 28 end points of meridians by Matayama, bioenergetic functional diagnostics by Schmidt, the three-point test by the "Vegatest" method. Another direction is development of the Shimmel's method of segmental electrography: under the stimulation of 13 Hz, the SEC of 7 segments of a body are tested and their condition estimated (normal, charge, rigidity, negative).

In 1950 Y. Nakatani discovered a line resembling the kidney meridian. The SEC at these points was higher in comparison with indifferent points. This phenomenon is observed exclusively in patients with kidney diseases. Similar lines were discovered in other meridians under pathological conditions. He named them Ryodoraku, or the lines of good skin conductivity. In healthy patients they are not met.

According to Nakatani, the mechanism of Ryodoraku is determined by the viscerocutaneous-sympathetic reflex. The pulses from internal organs are sent to the spinal cord. Efferent sympathetic nerves reflect it on the reflexogenic areas of the skin, thus creating a system of skin acupuncture zones (APZ). The symptoms of Ryodoraku are presented in Table 8.

Skin electrometry in the APZ system is the basis for the diagnostics of functional or pathological conditions of the organism or its systems.

The system of Ryodoraku was re-named "Electro Meridian Imaging" (EMI) by Dr. John A. Amaro in 1982. It gave the procedure a more medically acceptable contemporary term. This electronic method of evaluation is reliable, duplicable, easy to learn and employ, as well as being extremely simple to explain to the patient. It is literally changing the way acupuncture is being diagnostically and therapeutically treated internationally.

### **Computer Galvanopuncture Scanner (CGS) (Brief description)**

Computer Galvanopuncture Scanner (CGS) is the medical equipment of new generation and is used for screening diagnosis and therapy of functional disorders of digestive, cardiovascular, respiratory, endocrine, immune, neural and urogenital systems of human organism. CSG could be used for longitude clinical control of various treatment methods.

The principal algorithm used by CSG is the impulsive impedancometry of the reflexogenic zones following with computer processing of the registered biophysical parameters.

The evaluation of functional status of organs and systems is provided at six levels:

1. physiologic norm;
2. hypofunction;
3. hyperfunction;
4. significant hypofunction;
5. significant hyperfunction;
6. pathologic liability.

CSG complete set consists of diagnostic module, treatment module, computer software and hardware.

1. **Diagnostic module** is measuring the electroconductivity of the representative zones and obtaining numerical information as the result of manual and automatic galvanopuncture scanning.

2. **Treatment module** is a multifunctional electrostimulator realising the electric impact on zones and points with the constant and impulse current.

3. **CSG Software** consists of the set of computer programs that are analysing and processing the results of diagnosis. Also the output of results is presented in graphical, numerical and text formats.

3.1. Diagnosis programs are providing

- \* the diagnosis of functional status of organs and systems;
- \* evaluation of the dynamics of pathological process.

3.2. Treatment programs are realising

- \* electrotherapy;
- \* automatic selection of expert systems of impact zones and point for step-by-step correction of the general status of organism;
- \* selection of optimal regime and time of impact

4. **CSG Hardware** - Pentium MMX.