

Psychological Types: The Continuation

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C.G. Jung introduced the terms introversion and extraversion as very well perceptible attitudes of an individual with regard to his interaction with the environment.

In this work, we introduced an additional psychological attitude of an individual, which should be used as an additional classificatory feature if different psychological typologies are to be adequately represented.

This additional psychological attitude is the action-attitude. The action-attitude reflects the second pair of perceptible dispositions of an individual regarding his interaction with the environment - "Actor" (doer, active) and "Contemplator" (observer, passive).

Based on these two attitudes - the reference-point-attitude {Extravert, Introvert} and the action-attitude {Actor, Contemplator} - we have conceived the universal psychic coordinate system (UPCS).

The universal psychic coordinate system makes it possible to adequately depict different typologies, which are also based on completely different approaches.

We have shown that the well-known typologies according to C.G Jung, E. Kretschmer, F. Riemann, Myers-Briggs Type Indicator and socionics can be easily represented on the universal psychic coordinate system.

A gradation for the degree of psychotypical accentuation of individuals has been introduced as follows: accented -> medicented -> decented. It was shown which psychological types have which degree of psychotypical accentuation.

We also have shown a clear connection between specific manifestations of existential angst, adaptation mechanism and the principle of the minimum consumption of resources.

We assume that the universal psychic coordinate system also provides an adequate framework for all typologies that may be designed in the future. It can even serve as a criterion for the adequacy of such future typologies.

This work addresses the circle of readers interested in questions of psychology in general and psychological typologies in particular, as well as related aspects.

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1 Introduction

The topic of psychological typification has interested people since ancient times. We would like to take up this topic again here and develop it further.

We skip the well-known ancient doctrine of temperament, which can be traced back to Galen, Aristotle and Hippocrates. The temperament theory is based on the four-element theory, which - in modern terms - reflects the idea of four different states of matter. We are not looking at the doctrine of temperament here because the content that was ascribed to the basic concepts about 2000 years ago is hardly comprehensible today. Nevertheless, we leave the reader with the possibility of comparing the four ancient temperaments - sanguine, choleric, melancholic and phlegmatic - with the psychological types described in modern terms after reading this paper. Have fun with it!

We draw on exactly where C.G. Jung left off in his groundbreaking work "Psychological Types" (Zurich, 1921). Jung ends his 1923 explanatory article on the topic¹ with the following statement:

"For the sake of completeness I must also mention that I do not consider the typing according to Introversion and Extraversion and the four basic functions to be the only possible one. Any other psychological criterion could just as well be used as a classifying feature, but no other seemed to me to have a similar practical significance".

This is exactly where we want to continue, and we are looking for another, additional psychological criterion that could (and, as we will see later, should) just as well be used as a classifying feature.

2 Communicative Functions of Consciousness

What do we understand by the term "psychological types"?

The perception of a person (including self-perception) is always individual for each communicative situation. Among other things, it depends on both communication partners if only two are currently communicating with each other. This means that an act of communication is always situationally individual, see also [6], [8] and [9] for further explanations on this general topic².

However, if you look at a lot of communication acts of a certain person, you can observe a certain pattern, a kind of communication profile of this person. That is, if it deals with a statistical set of communication acts, a certain communication profile of a person can be expected, an *expected value (pattern)* for the communication profile of this person, so to speak.

¹ also with the title 'Psychological Types', but from 1923, see [1], chapter 'Psychological Types' (1923)

² This paper is written in such a way that it can be read independently; references given may be useful for further study of relevant topics.

We call an *expected value (pattern)* for the communication profile of a person ‘psychological type’ of this person.

The psychological type of a person can be perceived in different ways, but it is usually perceived as a set, a composition of certain character traits of that person, i.e. how that person usually communicates and behaves in different situations, what attitude he or she has that ‘gives a certain imprint to the character of the individual’ (according to C.G. Jung). Our understanding of the term ‘psychological type’ coincides with that of C.G. Jung, see [1], in Definitions: Type.

If we now look at the different expected values for the communication profiles of a statistically large number of individuals, we come to the conclusion that the number of these expected values is not infinite but limited. There are much less typical expected values of communication profiles than individuals. This fact has already been established in antiquity (see chapter 1) as well as in the fundamental works [1], [2] and [3] as well as in [4] and [5], based on [1].

In summary, an act of communication by a person is always situationally individual, at the same time there is - for each individual - an expected value for his or her communication profile (for the way he or she communicates), and the number of these possible expected values is - within the framework of a population - limited.

Since the perception of a person (his character traits, his habitual attitude) is about communication, about interaction with his environment, it can be assumed that the typical expected value of the communication profile of this person³, which we understand as the *psychological type* of this person, depends on the *basic inner functions* of the consciousness of this individual. This is not a new finding in itself, but has already been clearly elaborated in [1].

So now, we turn to the analysis of these basic functions of consciousness⁴, which is more far-reaching than the analysis based on observation and sharp mind in [1].

The process of interaction of an individual with his environment is shown - on the functional level - in Figure 1:

³ you could also call it the ‘expected pattern’

⁴ The basic functions of consciousness have already been briefly addressed in [8] (chapter 4.1, subsection ‘sociology’) and in [9] (chapter 6, subsection 5) as elements of the ‘communicative sub-process of consciousness’

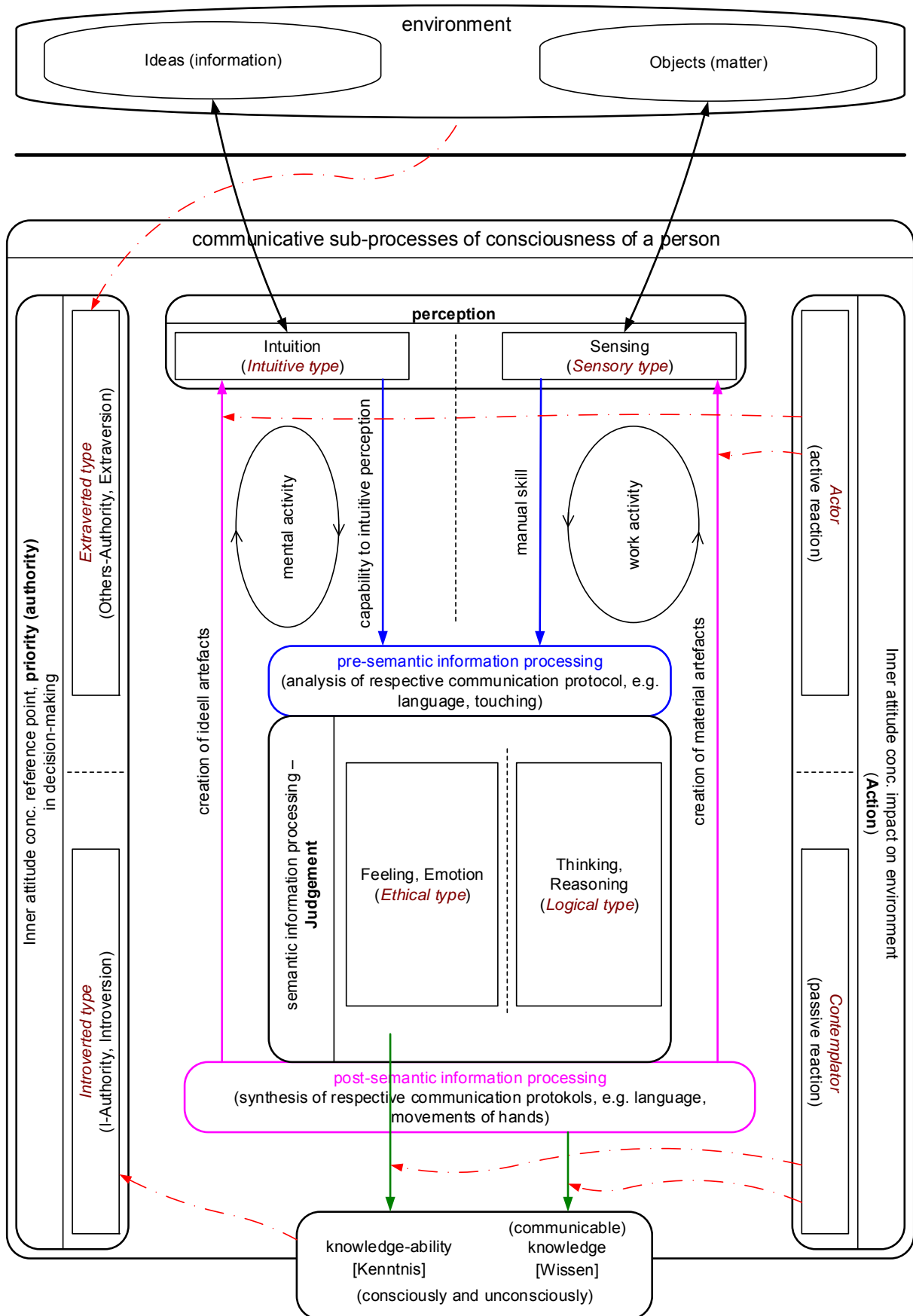


Figure 1: Communicative sub-process of the consciousness of a subject

Let us now follow together the course of the communicative sub-process of consciousness using the example of an initial influence on an individual by the environment.

Let us start with the fact that the environment as a whole is ultimately perceived as a complementary composition of matter and information, where this form of perception (i.e. matter vs. information) is a result of the interaction between the environment and the perceiving individual, see [8].

Accordingly, our *perceiving function* at the interface with the outside world has two types of input/output channels: *sensing* and *intuition*.

Sensing is responsible for the tactile perception of matter, intuition - for the perception of information. Everything involving touching objects, manual dexterity, craftsmanship, etc., in other words everything that is perceived through corporeal activity, is within the range of sensing. Everything that has to do with mental activity, e.g. with formalized signs perception such as language, is perceived through intuition.

For example, when we hear a pronounced sentence, our perception begins when acoustic waves cause our eardrum to vibrate. This vibration stimulates the nerve endings of the organ of Corti, which in turn generate electrical impulses that are transmitted from the inner ear to the brain. In this way, the act of perception is completed.

When an act of perception has taken place, its result is presented in a form, in which the meaning of the communication cannot yet be judged.

If, for example, we have heard a spoken sentence (the electrical impulses from the inner ear have arrived in the brain and the act of perception has thus been completed), our consciousness must first analyse this sentence syntactically, i.e. take the sentence apart in order to be able to extract the content of what was said.

This is precisely the task of pre-semantic analysis, see Figure 1, to analyse the respective communication protocol and extract (but not yet assess) the content transported with this protocol from it.

The next stage in the course of the communicative sub-process of consciousness is semantic information processing, for which the *judging function* is responsible. We always judge information in a complementary way: both rationally (by *reason*) and emotionally (by *feeling*), whereby the concrete "proportion" between them - depending on the act of communication - can be very different. In the context of semantic information processing, we understand the meaning, the (rational and emotional) content of the current communication act.

The result of exactly this semantic information processing, of the judgement is cognition. This cognition can be stored in the brain either directly as *knowledge-ability* (Kenntnis, see Glossary) or - after post-semantic synthesis - as *communicable knowledge* (Wissen, see Glossary).

An act of communication can also come to an end at this point if the individual does not react towards the environment.

What does it depend however on, whether or not a reaction towards the environment takes place? This is related to a certain basic attitude of the individual.

We distinguish two basic attitudes - the *reference-point-attitude* and the *action-attitude*, which we will now consider.

a) the *reference-point-attitude*

The one inner attitude of the person, which already at this point plays an immense role for the psychological type of this person, i.e. for the expected pattern of his or her communication profile, is the prioritization (authority) in decision making: "To whom do I as an individual attach a higher priority – to the external environment or to the inner knowledge? Is the I-authority or the Other-authority more important for me?" We call this one inner attitude the *reference-point-attitude*.

C.G. Jung has called these two complementary classes of this *reference-point-attitude* extraversion and introversion, see [1]. Introversion "expresses a negative relation of subject to object. Interest does not move towards the object, but withdraws from it into the subject". By extraversion, he means "a manifest relation of subject to object in the sense of a positive movement of subjective interest towards the object".

b) the *action-attitude*

The other inner attitude of the individual, which plays a significant role in the psychological type of this individual, is his propensity to influence or not influence his environment: "Should I now react to the impulses from the environment or is it sufficient for me to have simply gained a new insight? Should I enforce my vision or opinion outside or leave it alone? Should I actively shape the environment around me or passively observe it?" We call this other inner attitude the *action-attitude*.

The *action-attitude* is introduced and considered for the first time in this paper. We will show in further chapters that the *action-attitude* is as important and significant for shaping a psychological type as the *reference-point-attitude*.

The *action-attitude* represents exactly the other psychological criterion that can (and should) just as well be used as a classifying feature, see chapter 1.

The two complementary classes of this *action-attitude* are called *Actor* and *Contemplator*⁵, see Figure 1 above.

A typical Contemplator usually leaves it at his own cognition about an event in his environment without initiating a reaction on his part that is directed towards this environment. For a Contemplator, an act of communication ends with the storage of the knowledge-ability (Kenntnis) gained or the acquired communicable knowledge (Wissen). A Contemplator does not have sufficient motivation to actively influence his environment. He merely observes and looks (passively) at what is happening around him. A typical protagonist belonging to the Contemplator class is Ilya Oblomov (Rus.: Илья Обломов) from the novel of the same name by Ivan Goncharov.

A typical Actor, on the other hand, reacts actively to impulses from his environment and is always ready to give "feedback". He is almost always motivated to actively apply his knowledge-ability and his communicable knowledge to the environment and to assert his vision or opinion outside. In this way, he actively shapes his environment. A typical protagonist, who belongs to the Actor-class, is Andrei Stolz (Rus.: Андрей Штольц), a friend of Ilya Oblomov.

Thus, the communicative sub-process of the consciousness of an Actor-individual does not stop, but continues. We will now describe this proceeding, see Figure 1 above.

⁵ DE: Actor - Betrachter, EN: Doer - Contemplator, RU: Деятель - Созерцатель

If an individual has chosen the Actor-option of the action-attitude for a certain act of communication, then the knowledge gained as the result of the judgement function must (not only can!) pass through the *post-semantic synthesis*. The post-semantic synthesis has - compared to the pre-semantic analysis - exactly the inverse task: It packs the result of the judgement into a suitable communication protocol, so that the result of the judgement can be transported to the outside as knowledge, e.g. in the form of speech or movements with body parts (e.g. hand or finger movements).

If ideational knowledge should be transported to the outside, the communicative process of consciousness uses *intuition* as the appropriate interface to the environment, see Figure 1. In this way, ideational artefacts are created, e.g. laws of nature and various other regularities are discovered and documented as well as literary and musical works are written.

If, on the other hand, material knowledge should be transported to the outside, the communicative process of consciousness uses *sensing* as the appropriate interface to the environment. In this way, material artefacts are created, i.e. all kinds of material works, including works of art.

With the impact of the individual on his environment, a cycle, a passage of the communicative sub-process of consciousness for the Actor is completed.

Each communication partner of an individual (the Other) appears to that individual through the qualitative, phenomenological characteristics of how that Other communicates with the outside world, i.e., how the Other (see Figure 1):

- 1) exchanges information with its environment; the *perceiving function* (*sensing* and *intuition*) is responsible for this,
- 2) processes information; *the judging function* (*reasoning* and *feeling*) is responsible for this,
- 3) forwards information; it depends on the *action-attitude* (*Actor* or *Contemplator*), and
- 4) prioritizes information; this depends on the *reference-point-attitude* (*Extraversion* or *Introversion*).

The necessity of the existence of at least the above-mentioned communicative functions (perceiving and judging) and the inner attitudes (action and reference-point) of the consciousness follows from the fact that no ordered - and therefore usable - communication of an individual with his outside world is possible, if even one of the four above-mentioned components is eliminated. Without the perceiving function, there would be no interaction with the outside world at all; without the judging function, there would be no knowledge; without the action-attitude, there would be a disordered mess of what an individual should do with the knowledge gained/present - keep it with him or transport it to the outside world; without the reference-point-attitude, there would be a disordered mess of how the individual should prioritize his own knowledge over the knowledge from the outside world.

As we can see, both attitudes - the action-attitude and the reference-point-attitude - are associated with the basic relation of a system (in this case - an individual) "the inside vs. the outside"⁶.

⁶ More information can be found in [9], chapter 6, §5 and in [8], chapter 4.1 (including sub-section "Sociology") and 4.2 (including sub-group A2)

The existence of at least these communicative functions and these inner attitudes of consciousness is exactly the reason why there are typical expected values/patterns of communication profiles within a population of individuals. That is, there are typical expected patterns of behaviour of individuals, or, in other words, there are *psychological types* of individuals exactly because these communicative functions and inner attitudes of consciousness must exist.

With this insight, in the next chapter we will deal with the typification of expected patterns of individual behaviour, i.e. with psychological types.

3 Psychological Types as Communicative Perception of Personalities

As we ascertained in the previous chapter, these are in fact the two attitudes, the action-attitude and the reference-point-attitude, which most strongly shape the character of the relation "isolation vs. unification" ("the interior vs. the exterior"⁶) between the individual and his environment. The character of the relation "the interior vs. the exterior" determines the character of the interaction, the character of the communication of each system with its environment⁷.

Therefore, we consider the two attitudes of consciousness as the basis for the phenomenological typification of expected patterns of the behaviour of individuals, i.e. as the basis for the classification of psychological types.

The two communicative functions of the consciousness (the perceiving and the judging) will also play an important, however secondary role in this process, because they also influence this typification significantly, but nevertheless by an order of magnitude less than the two attitudes. The communicative functions of consciousness influence the strength of expression, the degree of accentuation⁸ of each psychotypical direction determined by attitudes.

Based on these considerations, we draw the corresponding coordinate system into which different psychological types are to be classified later. We call this coordinate system the *universal psychic coordinate system*:

⁷ More information can be found in [8], chapter 4.2 (including sub-section A2)

⁸ See [7] on the subject of "Accentuation".

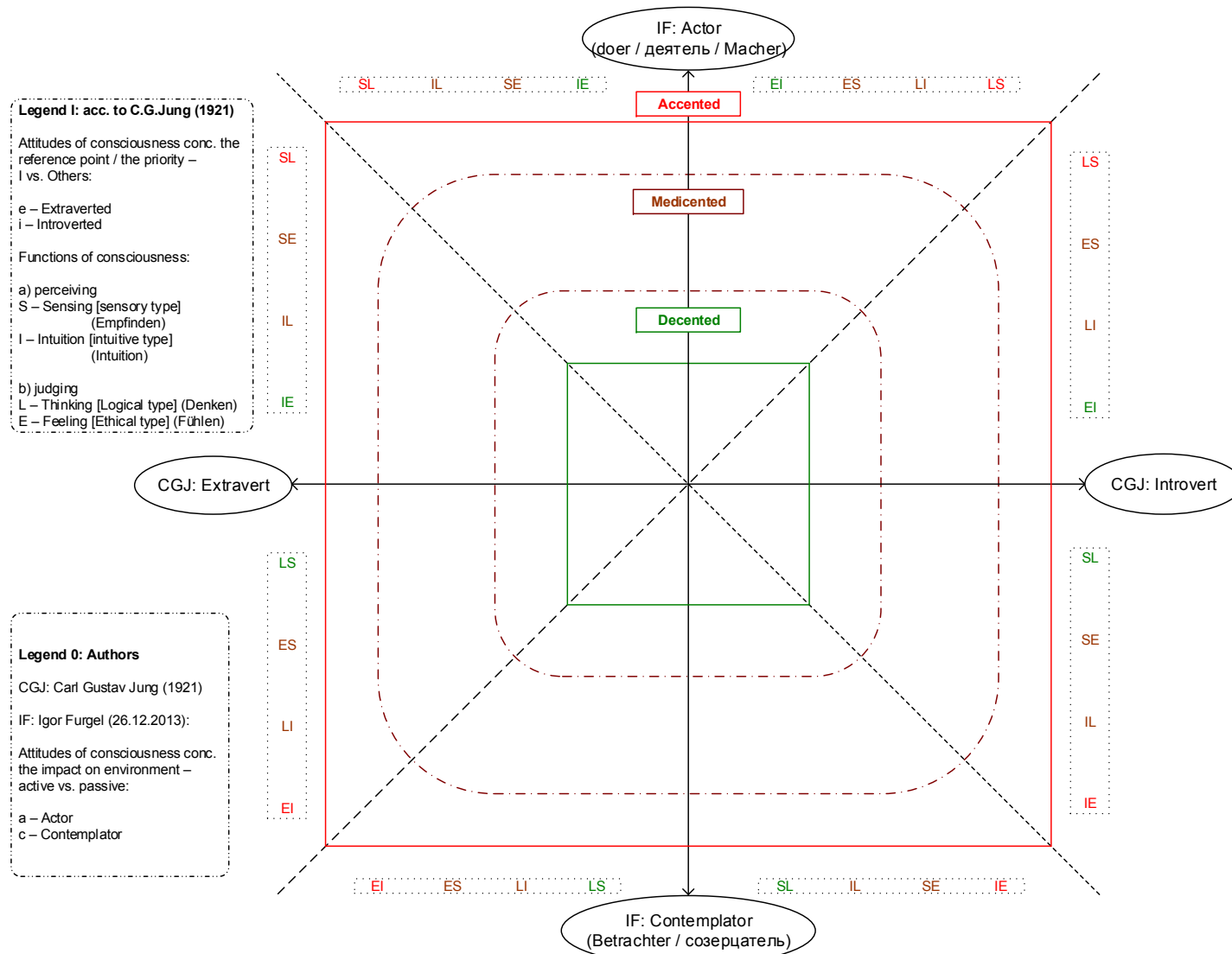


Figure 2: Universal coordinate system for psychological typification of individuals (universal psychic coordinate system, UPCS)

The horizontal axis of the psychic coordinate system represents the entire range of possible manifestations of the reference-point-attitude from extraversion left to introversion right. It represents two complementary classes of the reference-point-attitude as defined by C.G. Jung in [1]; see also chapter 2 above.

The vertical axis of the psychic coordinate system in turn represents the entire range of possible manifestations of the action-attitude from the Actor at the top to the Contemplator at the bottom. It represents two complementary classes of action-attitude, see also chapter 2 above. Both the Action-Attitude itself and its complementary classes - Actor and Contemplator - have been introduced in the present work first time.

The farther a psychological type is from the coordinate origin in Figure 2, the more typical characteristics of the respective class are pronounced, i.e. the more visible the individual is an Extravert or Introvert or an Actor or Contemplator. We are talking about the degree of *psychotypical accentuation*⁹.

In this context, all possible psychological types can be divided into three major subgroups:

- *Accented*: they are furthest away from the coordinate origin, therefore the corresponding properties of the complementary classes are most pronounced;
- *Decented*: they are closest to the coordinate origin, therefore the corresponding properties of the complementary classes are the weakest;
- *Medicented*: the subgroup between the accented and the decented, i.e. with the characteristics of the complementary classes pronounced to a medium degree.

We have already mentioned that the communicative functions of the consciousness - the perceiving and the judging - influence the strength of expression, the degree of accentuation of each psychotypical direction determined by the attitudes. Now the question arises - How?

Both the sensing interface of the perceiving function responsible for sensory contact with the outside world (marked S in Figure 2) and a rational, logical judgement of the received information (marked L in Figure 2) reinforce, accentuate both attitudes of an Actor, and at the same time weaken, decentuate both attitudes of a Contemplator.

In fact, it is advantageous for an active outside world influencer (Actor) to communicate with the outside world sensory, tactile and to process information analytically, logically. These two communicative properties make an active influence on the outside world more efficient and, for this very reason, reinforce the existing accentuation of an Actor's reference-point-attitude, i.e. on the Extravert-Introvert axis, see Figure 2.

Here, it should not remain unmentioned that C.G. Jung observed the following circumstance: perceiving and judging functions almost never occur to the same extent in an individual: one of them is almost always more pronounced than the other, see [1]. That is why the communicative functions for the purpose of psychotyping are always carried in pairs, as different combinations of four possibilities.

The sensory-logical combination (shown as SL on Figure 2) means, for example, that the individual predominantly uses the sensory interface of the perceiving function and processes information logically (see Figure 2), whereby sensory perception is more important to him than logical judgement.

The logical-sensory combination (shown as LS on Figure 2) means that the individual uses the sensory interface of the perceiving function predominantly and processes information

⁹ See [7] on the subject of "Accentuation".

logically (see Figure 1), but logical judgement is more important to him than sensory perception.

Returning to the relation between the degree of accentuation and the communicative functions, it can be further observed that both the intuition interface of the perceiving function, which is responsible for the mental, intuitive contact with the outside world (marked I in Figure 2), and an emotionally controlled judgement of the received information (marked E in Figure 2) reinforce and accentuate both attitudes of a Contemplator, and at the same time weaken and deaccentuate both attitudes of an Actor.

In fact, it is beneficial for a passive Contemplator of the outside world to communicate with the outside world intuitively, mentally, ideally, and to process information synthetically, emotionally. These two communicative properties minimize an active influence on the outside world and, for this very reason, reinforce the existing accentuation of a Contemplator's reference-point-attitude, i.e. on the Extravert-Introvert axis, see Figure 2.

Figure 2 shows these considerations as follows:

- 1) The maximum accentuation of an Actor goes along with the combinations LS or SL;
- 2) Its minimal accentuation - with the combinations EI or IE;
- 3) The maximum accentuation of a Contemplator goes along with the combinations EI or IE;
- 4) Its minimal accentuation - with the combinations LS or SL.

The remaining possible combinations of the two communicative functions - IL or LI and ES or SE - are placed in the "medicented" centre in such a way that the emphasis of the respective attitude is steadily reinforced (in the direction away from the coordinate origin), see Figure 2.

Now we can use the created psychic coordinate system to place there different psychological types according to their characteristics. We hope to create a universal classification system of psychological types. This is the main topic of the next chapter.

4 Universal Classification System of Psychological Types

Before we move on to the construction of a universal classification system of psychological types, we would like briefly survey what we consider as the most important existing classifications of psychological types.

This brief survey serves, above all, a better readability.

In our view, the most important existing classifications of psychological types are by:

- C.G. Jung, see [1];
as we have already mentioned in chapter 1, we consider this work of C.G. Jung as the "big bang" of the modern teaching on psychological types.
The Myers-Briggs System (MBTI - Myers-Briggs Type Indicator) [4] and socionics [5] were directly derived from Jungian classification and represent its (not always adequate, but nevertheless helpful) refinement;
- E. Kretschmer, see [2];
Historically, E. Kretschmer and C.G. Jung created their classifications simultaneously.
When reading these original sources, one gets the impression that both authors created

their classification systems independently of each other, although it is hardly imaginable that they had not known each other personally; one could consider E. Kretschmer as the big bang of the modern teaching on psychological types, parallel to C.G. Jung: He has statistically linked them with various typical elements of physique;

- F. Riemann, see [3];

his work was created almost 50 years later. Although he references neither C.G. Jung nor E. Kretschmer directly, it is inconceivable that he did not know their works. In fact, he refers to a possible connection between personality structures and physique (obvious allusion to E. Kretschmer) and delimits his approach, p. 30 of [3].

F. Riemann had a completely different basis for his classification system: he combined the psychological types, he identified, with various basic forms of anxiety. This is indeed a significant aspect that should never be ignored in psychology, see for example [10].

Now we will first deal with the brief survey.

4.1 Carl Gustav Jung

Carl Gustav Jung introduces his classification of psychological types in [1]. First of all, it distinguishes between two basic attitudes of a person: one attitude - called *extraverted* - characterizes the group of individuals who derive their motivations mainly from their environment, the other attitude - called *introverted* - characterizes the group of individuals who derive their motivations mainly from their inner circumstances.

In other words, extraverts are outwardly oriented in conceiving their opinion, while introverts are inwardly oriented.

The inner reference-point-attitude with its two complementary classes of extraversion and introversion, addressed in chapter 2 of this work, was completely derived from and coincides with Jungian ideas.

In the next step, C.G. Jung introduces four basic functions: *sensing*, *intuition*, *feeling* and *thinking*.

By sensing he understands all perceptions by the sense organs; by intuition - the perception by unconscious means or the perception of unconscious contents; by feeling he understands a function of subjective value giving and by thinking - the function of intellectual cognition and logical conclusion, see [1]. According to Jung, these basic functions are differently developed (differentiated) in each individual.

In the present work, these Jungian basic functions were completely embedded in the communicative sub-process of a subject's consciousness, see Figure 1 in chapter 2, and presented there as respective manifestations of the *perceiving* (sensing and intuition) and the *judging* (feeling and thinking) functions.

It should be noted here that we have already shown the necessity of the presence of at least these two communicative functions (the perceiving and the judging) and the two inner attitudes (the reference-point-attitude [C.G. Jung] and the action-attitude [I. Furgel]) of consciousness at the end of chapter 2.

The individual expression of these basic functions now "interferes" with the individual - extraverted or introverted - attitude of an individual. C.G. Jung writes: "In summary, I would like to state that each of the two general attitudes, namely introversion and extraversion, appears in a special way in the individual depending on the predominance of one of the four basic functions. In reality, there are not introverts and extraverts as such, but there are introverted and extraverted function types... This results in a minimum of eight clearly distinguishable types", see [1], p. 145.

We now use the psychic coordinate system prepared in chapter 3 and embed the eight Jungian psychological types in it.

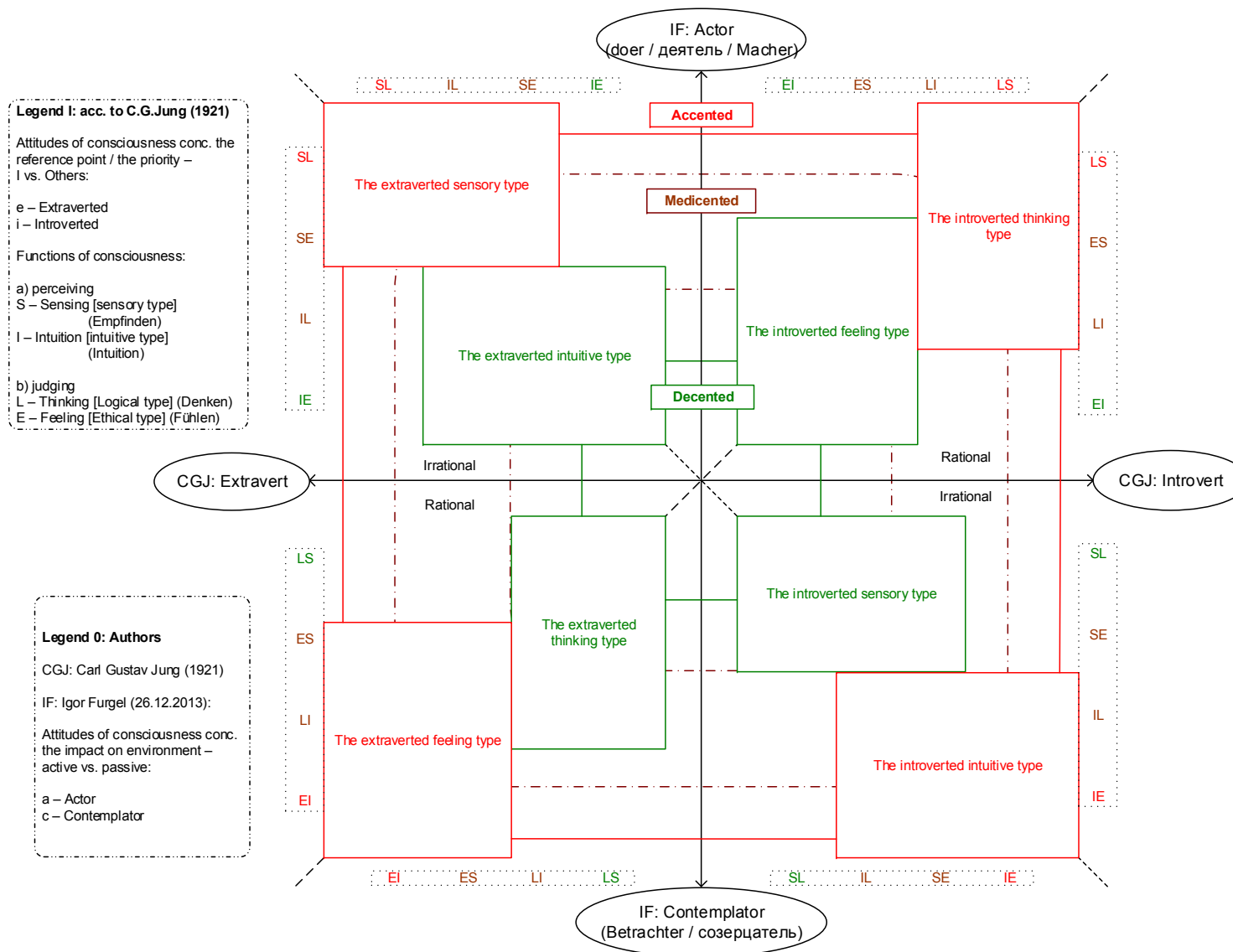


Figure 1: Typology according to C.G. Jung in the universal psychic coordinate system

A description of the expected behavioural pattern for the respective type can be found in [1].

The psychological types according to Jung were positioned on the universal psychic coordinate system as follows:

- The type of sensing in both forms - introverted and extraverted - is always represented by the combinations of the functions of consciousness beginning with "S" (for sensory type), i.e. SL and SE;
- The intuitive type is always represented by the combinations of the functions of consciousness beginning with "I" (for intuitive type), i.e. IL and IE;
- The type of thinking is always represented by the combinations of the functions of consciousness beginning with "L" (for logician), i.e. LI and LS;
- The feeling type is always represented by the combinations of the functions of consciousness beginning with "E" (for ethicist), i.e. EI and ES;

It was taken into account that the respective function type is always determined by which of the basic functions is most pronounced in an individual. This is exactly what is shown by the arrangement of the letters in the letter combinations on the universal psychic coordinate system: the first letter in the respective letter combination shows the most pronounced function, e.g. the combinations SL and SE show that the basic function "S" (sensing) dominates here.

In [1] C.G. Jung has made a further grouping of types, independent of the extraverted or introverted attitude of the individual. The types with a more pronounced perceiving function (i.e. sensing or intuition, see Figure 1) he called "rational types"; the types with a more pronounced judging function (i.e. thinking or feeling, see Figure 1) he called "ir-rational types".

From our point of view, the difference between the rational and irrational groups of types can be summarized as follows:

- The individuals from the *rational* group of types (judging types) act and make their decisions rather "ex ante", i.e. they tend to consider their actions in advance.
- The individuals from the *irrational* group of types (perceiving types) act and make their decisions rather "ex post", i.e. they act and only then think about the consequences of their actions.

However, this rational-irrational grouping of types according to the functions of consciousness was by no means conceived by C.G. Jung as an independent communicative function or characteristic of consciousness, see [1], pp. 69, 83, 109 and 123. This means that a consideration of the rational-irrational grouping of types as an independent characteristic of consciousness contradicts Jung's approach per se.

At this point, it should again be remembered that the vertical axis in Figure 1, which represents the action-attitude with its complementary classes - Actor and Contemplator - did not exist in Jungian description and was introduced first in this work. The introduction of the action-attitude is the necessary complement to the set of mutually independent characteristics of consciousness, as explained at the end of chapter 2.

4.1.1 Myers-Briggs (MBTI)

The Myers-Briggs Type Indicator (MBTI) was introduced by Isabel Myers and Katharine Cook Briggs in the 1940s as an interpretation and refinement of Jungian classification, see [4].

In the Myers-Briggs system, the approach of C.G. Jung, see chapter 4.1, has been fully adopted, supplemented and refined as follows:

- i) The reference-point-attitude (Energizing Preference according to MBTI) with both complementary classes - Extraversion (E) and Introversion (I) - has been completely adopted,
- ii) The perceiving function (Attention Preference according to MBTI) with its two complementary variants - Sensing (S) and Intuition (N) - has been fully adopted,
- iii) The judging function (Deciding Preference according to MBTI) with its two complementary variants - Feeling (F) and Thinking (T) - has been fully adopted.

K. Briggs and I. Myers have interpreted the grouping of types into *rational* and *irrational* types, introduced by C.G. Jung, see chapter 4.1, as an additional, independent characteristic of the consciousness of individual. For this additional characteristic, which is independent from their point of view, they have introduced "Living Preference" with the possible values "Perception (P)" for irrational types and "Judgement (J)" for rational types.

The content of these values has been retained as C.G. Jung defined the two groups:

- the types with a more pronounced perceiving function (i.e. sensing or intuition, see Figure 1) were called "irrational types" by C.G. Jung;
- the types with a more pronounced judging function (i.e. thinking or feeling, see Figure 1) he called "rational types",

s. chapter 4.1 above on the "ex post" (for irrational types) and "ex ante" (for rational types) decision modes.

This is how the fourth indicator was created in the MBTI system:

- iv) The "Living Preference" with its two complementary variants - Perception (P) and Judgement (J).

With the four indicators, treated as independent of each other in the MBTI system, and with two complementary possible values for each indicator, 16 psychological types can be distinguished. They are shown in the following figure, whereby we use the psychic coordinate system established in chapter 3:

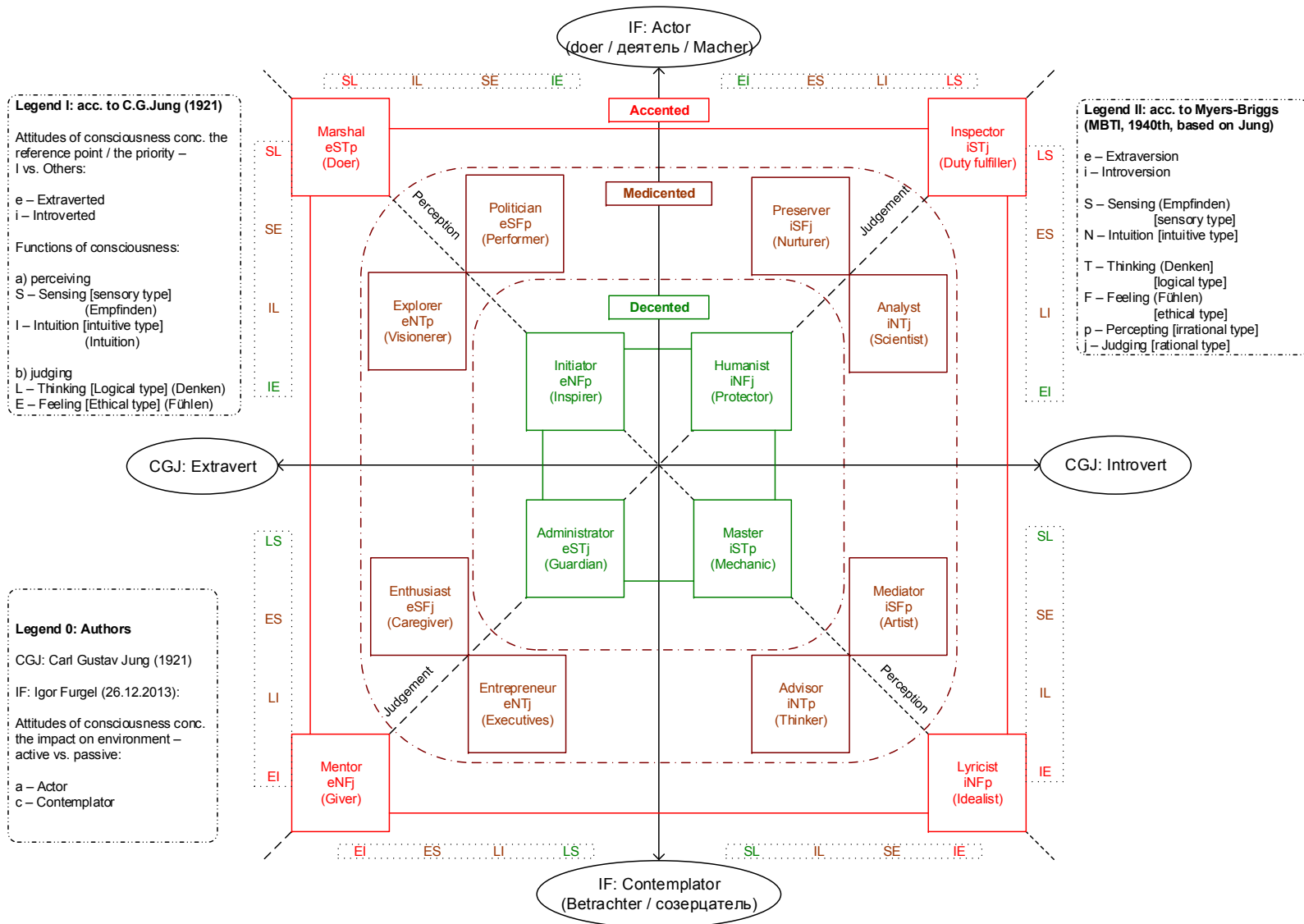


Figure 2: Typology according to Myers-Briggs in the universal psychic coordinate system

Figure 2 shows 16 psychological types according to Myers-Briggs. The legend for the MBTI denotations is shown in Figure 2 as Legend II. The usual type denotations for MBTI are to be understood as shown by the example of eSTp (Marschall, Doer): The eSTp type stands for {Extraversion (e), Sensing (S), Thinking (T), Perceiving (p)}. Sometimes the individual types are given names in relevant literature that connote their appropriate social functions.

A description of the expected behavioural pattern for the respective type can be found in [4] and on the Internet.

We now ask the question of the relation between the psychological types in Jungian (Figure 1) and MBTI (Figure 2) representation. The answer to this question is easiest to get by superimposing the two illustrations - Figure 2 (MBTI) and Figure 1 (C.G. Jung).

Here we give two examples in detail:

The extraverted sensory type, see Figure 1, is - according to the definition in [1] - an extraverted type at which the sensory function (S) is most strongly differentiated. In Figure 2, this constellation is initially represented by two combinations of the basic functions of consciousness: SL and SE. The corresponding two MBTI types are then eSTp and eSFp. Thus, we find that the extraverted sensory type (according to C.G. Jung) is refined as two types - eSTp and eSFp - in the MBTI system.

The extraverted feeling type, s. Figure 1, is - according to the definition in [1] - an extroverted type at which the sensing function (E) is most pronounced. In Figure 2, this constellation is initially represented by two combinations of the basic functions of consciousness: EI and ES. The corresponding two MBTI types are then eNFj and eSFj, so we find that the extraverted feeling type (according to C.G. Jung) is refined as two types - eNFj and eSFj - in the MBTI system.

If you apply this method to all Jungian and MBTI types, you get the following comparison for all types:

Typology according to C.G. Jung (Figure 1)	Accentuation	Typology according to Myers-Briggs (Figure 2)	Action-Attitude	Accentuation
extroverted sensory type	medicented plus	eSTp	Actor	accented
		eSFp		medicented
extroverted intuitive type	medicented minus	eNTp		medicented
		eNFp		decented
extroverted thinking type	medicented minus	eSTj	Contemplator	decented
		eNTj		medicented
extroverted feeling type	medicented plus	eSFj		medicented
		eNFj		accented
introverted intuitive type	medicented plus	iNFp	Contemplator	accented
		iNTp		medicented
introverted sensory type	medicented minus	iSFp		medicented
		iSTp		decented

Typology according to C.G. Jung (Figure 1)	Accentuation	Typology according to Myers-Briggs (Figure 2)	Action-Attitude	Accentuation
introverted feeling type	medicented minus	iNFj	Actor	decented
		iSFj		medicented
introverted thinking type	medicented plus	iNTj		medicented
		iSTj		accented

It can first be stated that the two typologies can be easily mapped to each other in the universal psychic coordinate system.

Furthermore, we note that Jungian typology, which distinguishes half as many types as the MBTI system, cannot perceive some differences between the "combined" MBTI types: e.g., iNTj and iSTj (the introverted thinking type).

One of the consequences of this is that Jungian typology only treats *medicented* psychological types. However, the range of this medicentuation is wider than the MBTI system, because each of the eight Jungian types has more characteristics than each of the 16 MBTI types. For example, the introverted feeling type (according to C.G. Jung) includes both - the medicented iSFj type and the decented iNFj type (according to Myers-Briggs). This is why we have called the accentuation of the introverted feeling type "medicented minus".

This also means that Jungian typology tends to deal with the psychological types of the statistical middle of the population, so that very flamboyant (accented) or unflashy (decented) types are described in less detail by this typology.

We would now like to take a closer look at the fourth indicator of the MBTI system - the Living Preference with its two complementary variants - perception (P, Irrational) and judgement (J, Rational). On the presentation of the MBTI typology on the psychic coordinate system, see Figure 2, this fourth indicator is shown as a diagonal.

The (introverted and extraverted) group of types, in which the perceiving (S or I) function of consciousness is more pronounced, lies on the diagonal "Perception". The (introverted and extraverted) group of types, in which the judging (L or E) function of consciousness is more differentiated, lies on the diagonal "Judgement". This again underlines the equivalence of the meaning of the terms "Irrational" (Jung) ⇔ "Perception" (MBTI) and "Rational" (Jung) ⇔ "Judgement" (MBTI).

On closer examination, the fourth indicator of the MBTI (Living Preference) is not an independent characteristic, but a combination of the basic functions of consciousness. Consequently, the corresponding values "Perception" and "Judgement" are not represented as values of one of the main axes of the psychic coordinate system, but as diagonals.

The Myers-Briggs system addresses, among other things, the issue of type compatibility (easily found on the Internet). As we have shown in [9], chapter 6, the type compatibility only plays its greatest role in the initiation of communication between two individuals. However, this does not diminish the importance of this aspect.

Within the MBTI system, the ideal type compatibility always exists for type pairs with complementary individual properties. Here are two examples: for the type eNTP the ideally compatible type is iSFj (e -> i, N -> S, T -> F, p -> j); for the type iNFP the ideally compatible type is eSTj (i -> e, N -> S, F -> T, p -> j). In this way, all other ideal type compatibilities can also be constructed.

Looking at all ideal type compatibilities according to MBTI, one comes to the conclusion that - for each "ideal pair", such as eNTP-iSFj - both types are either simultaneously Actors or simultaneously Contemplators with respect to the action-attitude. For example, the "ideally compatible" types eNTP-iSFj are both Actors; the "ideally compatible" types iNFP-eSTj are both Contemplators.

However, the complementarity approach would expect ideally compatible pairs to have different classes of action-attitude (Actor vs. Contemplator)¹⁰, which is not the case with the MBTI system.

The reason for this problem of the MBTI system is the fact that the fourth indicator of the MBTI (Living Preference) is, in fact, not an independent characteristic, but a combination of basic functions of consciousness.

Notwithstanding this, a great, undeniable achievement of the Myers-Briggs system is the adequate refinement of Jungian typology from 8 to 16 types and a detailed description of the behavioural patterns for all 16 psychological types.

4.1.2 Socionics

Socionics was introduced by Aušra Augustinavičiūtė in the 1970s - 80s as an interpretation and refinement of Jungian classification system, see [5].

Socionics adopted the concept of "informational metabolism", which was introduced by Antoni Kępiński in his work "*Psychopatologia nerwic (Psychopathology of Neuroses)*" as a parallel to the energetic metabolism of the body. The "informational metabolism" can be understood as the reception and processing of signals from the environment and the reaction to these signals by a human being.

In socionics, the approach of C.G. Jung, see section 4.1, has been fully adopted, supplemented and refined as follows:

- i) The reference-point-attitude with both complementary classes - Extraversion (E) and Introversion (I) - has been completely adopted,
- ii) The perceiving function with its two complementary variants - sensing (sensory, S) and intuition (intuition, I) - has been completely taken over,

¹⁰ As we have noted in chapters 2 and 3, it is in fact the two attitudes, the Action-Attitude and the Reference-Point-Attitude, which most strongly characterize the character of the relation "isolation vs. unification" ("the interior vs. the exterior") between the individual and his environment. It is precisely the character of the relation "the interior vs. the exterior" that determines the character of the interaction, the character of the communication of each system with its environment. Therefore, we consider the two attitudes of consciousness as the basis for the phenomenological typification of expected patterns of the behaviour of individuals, i.e. as the basis for the classification of psychological types.

Therefore, an adequate subsumption of types in terms of action-attitude has a higher priority than a "matching" subsumption in terms of the "Living Preference" indicator.

- iii) The judging function with its two complementary variants - feeling (ethics, E) and thinking (logic, L) - has been fully adopted.

A. Augustinavičiūtė has interpreted the grouping of types introduced by C.G. Jung into *rational* and *irrational* types, see chap. 4.1, as an additional, independent characteristic of the individual's consciousness.

The content of these values has been retained as C.G. Jung defined the two groups: The types with a more pronounced perceiving function (i.e. sensing or intuition, see Figure 1) were called "irrational types" by C.G. Jung; the types with a more pronounced judging function (i.e. thinking or feeling, see Figure 1) were called "rational types", see chapter 4.1 above on the "ex post" (for irrational types) and "ex ante" (for rational types) decision modes.

This is how the fourth characteristic was created in socionics, which corresponds to the "Living Preference" with its two complementary variants of the MBTI - Perception (P - Irrational) and Judgement (J - Rational). Very often, however, the 3-symbol notation is used in socionics without explicitly specifying the characteristic "rational-irrational". However, this characteristic is always implicitly indicated by the order of the basic functions of consciousness. For example, Lli means Logicians-Intuit-Introvert, Ili - Intuit-Logicians-Introvert; the sequence Logic-Intuit indicates a rational, the sequence Intuit-Logicians - an irrational type.

In practical terms, there are hardly any differences between the Myers-Briggs system (see chapter 4.1.1) and socionics.

With the four characteristics, which are treated as independent of each other in socionics, and with two complementary possible values for each indicator, 16 psychological types can be distinguished. They are shown in the following figure, whereby we use the psychic coordinate system established in chapter 3:

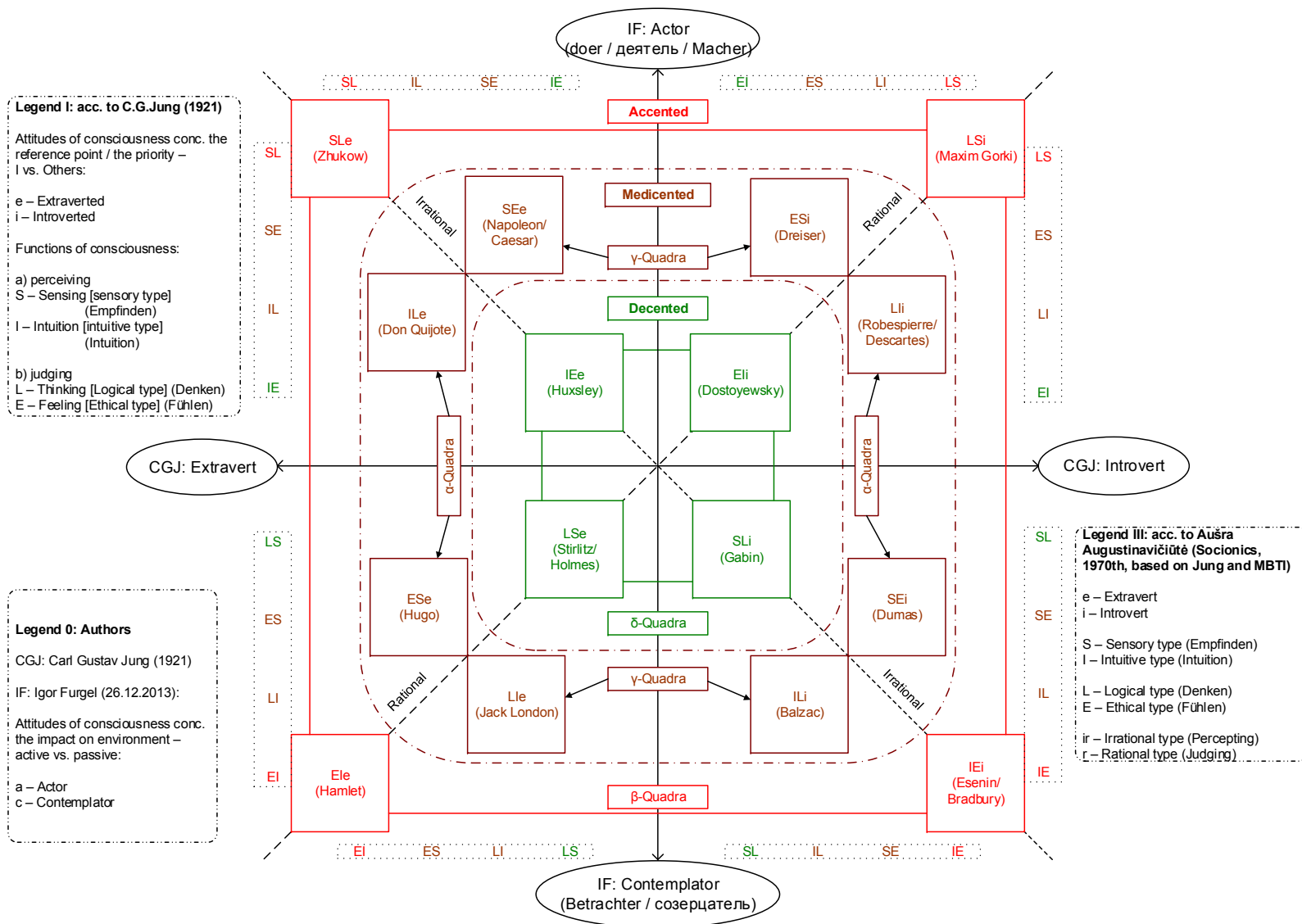


Figure 3: Typology according to socionics in the universal psychic coordinate system

Figure 3 shows 16 psychological types according to socionics. The legend for the socionics denotation is shown in Figure 3 as Legend III. The type denotations usual for socionics are to be understood as can be seen by the example of ILi (Balzac): The ILi type stands for {Intuition (I), Logic (L), Introversion (i)}. The order I, L is important because it gives an irrational type. The single types are always provided in relevant literature with names of well-known personalities matching the respective type.

A description of the expected behavioural pattern for the respective type can be found in [5] and on the Internet.

We now ask the question of the relation between the psychological types in the MBTI (Figure 2) and the socionics (Figure 3) representation. Since the 4 MBTI indicators and 4 socionics characteristics are identical, including the possible values for each characteristic, the 16 psychological types of these two systems are also identical. For example, the type iNTp (MBTI, advisor) corresponds to the type ILi (socionics, Balzac): both represent introverted intuitive Logicians, whereby intuition is more pronounced than logic (irrational).

Socionics, among other things, divides the 16 types into four quadras, the principle of this division being that the types of a quadra should complement each other. These four quadras are shown in Figure 3.

The β -quadra includes all accented types. In theory, these types actually complement each other. In practice, however, the relationships between the corresponding individuals are likely to be very tense, because all members of this quadra are accented personalities. The high degree of these tensions is likely to increase creativity in the work of such a group of individuals, while reducing productivity.

The described δ -quadra comprises all decented types. Decented types attach great importance to the balance of interests and a harmonious atmosphere. The low level of tension is likely to reduce the creativity of such a group of individuals somewhat, but increase productivity.

The other two quadras - α and γ - each comprise four medicented types. In the two quadras, there should be a medium degree of tension, creativity and productivity. A cooperation of individuals in a group that includes all types from both - α and γ - quadras should bring an optimal level of tension, creativity and productivity.

Since the socionics typology is based on the same four characteristics as the MBTI system, it has the same problem: the fourth characteristic of socionics (rational / irrational) is not an independent one, but a combination of basic functions of consciousness. Consequently, the corresponding values "irrational" and "rational" are not represented as values of one of the main axes of the psychic coordinate system, but as diagonals.

Socionics also deals with the question of type compatibility (easily found on the Internet). As we have shown in [9], chapter 6, type compatibility plays its greatest role merely in the initiation of communication between two individuals. However, this does not diminish the importance of this aspect.

In socionics, "ideally" compatible relationships between types are called dual relationships, and the corresponding types themselves are called "duals". The ideal type compatibility always exists with type pairs with complementary individual characteristics, with the exception for the fourth characteristic: socionics duals always belong to the same group - rational or irrational. Here are two examples: For type IEe, the ideally compatible type is SLi (I -> S, E -> L, e -> i, both irrational); for type ESi, the ideally compatible type is LIE (E -> L, S -> I, i -> e, both rational). In this way, all other ideal type compatibilities (duals) can also be constructed.

Looking at all ideal type compatibilities according to socionics, one comes to the conclusion that - for any dual pair, such as IEe-SLi - both types are either simultaneously rational or irrational. For example, the Dual IEe-SLi are both irrational; the Dual ESi-LIE - both rational. This, however, does not pose a real problem, because the fourth characteristic of socionics is not really independent.

If one considers all duals with respect to the other tuple of four {reference-point-attitude, action-attitude, perception function, judgement function}, all types of the respective duals have exclusively complementary values. For example, for the Dual IEe-SLi: {Extravert, Intuit, Ethics, Actor} - {Introvert, Sensory type, Logicians, Contemplator} all single values are complementary.

This means, among other things, that the universal psychic coordinate system introduced in this work, with the action-attitude as a truly independent characteristic of the communicative sub-process of consciousness, solves this problem of socionics.

We regard socionics as a valuable further development of Jungian and Myers-Brigg's typologies.

4.2 Ernst Kretschmer

E. Kretschmer created his fundamental work [2] based on the observations of patients from southern Germany and the analysis of hundreds of patient files of the Winnental sanatorium, which included (partial-) family histories and patient photos. As one of the main results of this work, he found, on the one hand, the possibility of a psychological typology of individuals and, on the other hand, he discovered a correlation between these psychological types and physique.

Historically, E. Kretschmer and C.G. Jung created their classifications simultaneously. When reading the corresponding original sources, the impression arises that both authors created their classification systems independently of each other, although it is hard to imagine that they did not know each other personally.

In the current context, we are exclusively concerned with the psychological typology of individuals created by E. Kretschmer and completely exclude the physique typology. The latter can be read about directly in part 1 of [2].

The description of the psychological typology according to E. Kretschmer can be found in part 2 "The Temperaments" of [2]. As temperaments, he denominates different personality types he has summarized.

E. Kretschmer initially divides all types into two large groups: *cycloid* and *schizoid* temperaments.

We will now briefly review the main distinguishing features of these two groups according to Kretschmer and ask ourselves whether Kretschmer's temperaments can be adequately represented on the universal psychic coordinate system.

a) The cycloid types

The cycloid types (also very often called *cyclothymys* in order to avoid seeing the degree of expression of the characteristics of this type group in the pathological area of bipolar affective disorder) are characterized by the following basic features: they are sociable, kind-hearted, friendly, cosy, s. [2], chap. 9. You can get along with these people well, they are fun, take life as it is and act naturally and openly.

The cyclothymys "have the need to speak, laugh and cry out. They look for the next, natural way to get their minds moving in the adequate way, to make them happy and relieved: in dealing with people. ...Because their temperament resonates with the milieu, there is no sharp contrast between ego and environment, no rejection in principle, no rigid desire to correct according to fixed guidelines, no tragically intensified conflict, but rather a life in things, a merging into things, a living with things, sympathy and compassion".

If we compare the description of characteristics of cyclothymys quoted above with the characteristics of extraverted individuals according to C.G. Jung, we inevitably come to the conclusion that these two types from different typologies do after all describe one and the same personality profile. In both cases, the orientation of the subject towards the environment or the object is particularly decisive.

Thus, we find that the cyclothymic temperament according to E. Kretschmer corresponds to the extraverted class of Jungian reference-point attitude.

Cyclothymys are subject to the so-called diathetic proportion / predisposition:

- 1) Hypomanic: from cheerful, humorous, lively and heated
- 2) Depressive: to quiet, calm, floating, soft.¹¹

The following specific¹² characteristics are typical of hypomanic cyclothymys: quick-wittedness, verve, daring, inventiveness, eloquence, tireless work and joy of work, tendency to superficiality, tactlessness, unsteadiness, overestimation of self, daring.

The following specific characteristics are typical of depressive cyclothymys: faithfulness to work, conscientiousness, solidity, calm, practical view, preferring windless times; in restless,

¹¹ The terms "hypomanic" and "depressive" have nothing in common with the clinical pictures; they always mean something characterological.

¹² i.e. in addition to the general properties of cyclothymys

unusual situations they lose courage, thought and energy more easily; no bigotry and pedantry, indulgent towards those who think differently.

If we compare the description of characteristics of hypomanic and depressive cyclothymy with the characteristics of the *Actor* and *Contemplator* classes of the action-attitude, see chapter 2 above, we find that

- 1) the hypomanic cyclothymy are Actors (hypomanic) and Extraverts (cyclothymy), and
- 2) the depressive cyclothymy are Contemplators (depressive) and extraverts (cyclothymy).

Thus we also find that the diathetic proportion of cyclothymy according to E. Kretschmer corresponds to the action-attitude introduced in the present work.

In [2], chapter 9 some concrete cyclothymic types are described as examples. The comparison of the personality profiles described there allows a clear overlap with the MBTI and socionics types:

- Rapid hypomanic type (Kretschmer: Flott hypomanischer Typus) ⇔ eSTp (MBTI) ⇔ SLe (socionics),
- Contented type (Kretschmer: Stillvergnügter Typus) ⇔ eSFj (MBTI) ⇔ ESe (socionics),
- Phlegmatic type (Kretschmer: Schwerblütiger Typus) ⇔ eNFj (MBTI) ⇔ ELe (socionics).

b) The schizoid types

The schizoid types (also very often called *schizothymy*, in order not to see the degree of expression of the characteristics of this type group in the pathological area of schizophrenia) are characterized by the following basic features: they are unsociable, quiet, reserved, serious, distant, see [2], chapter 10.

Schizothymy cannot be described more adequately than E. Kretschmer did himself:

"Schizoid people have a surface and a depth. Cuttingly brutal or sullenly dull or spikily ironic or mollusc-like shy ...- that is the surface. ... Many schizoid people are like bare Roman houses, villas that have closed their shutters to the glaring sun; but in their subdued interior light parties are celebrated".

"Living-into-oneself. You can't know what they feel; sometimes they don't know themselves, or only vaguely... But what they feel, whether it is banality, a quirk, a meanness or a fairy tale treasure, is for no one - but for them alone".

If we compare the description of characteristics of schizothymy quoted above with the characteristics of introverted individuals according to C.G. Jung, we inevitably come to the conclusion that these two types from different typologies describe one and the same personality profile after all. What is particularly decisive here is the orientation of the subject in both cases towards itself or towards living-into-oneself.

Thus, we find that the schizothymic temperament according to E. Kretschmer corresponds to the introverted class of Jungian reference-point-attitude.

The schizothymys are subject to the so-called psychaesthetic proportion / predisposition:

- 1) Hyperaesthetic: from timid, shy, delicate, sensitive, nervous, excited
- 2) Anaesthetic: to little spontaneous, indifferent, cool, stubborn, dull.

The following specific¹³ characteristics are typical for hyperaesthetic schizothymys: psychological hypersensitivity ("mimosa"), withdrawal into oneself, friends of a "controlled", regulated environment, defensive rejection of interaction with the environment, anxiety.

Anaesthetic schizothymys have the following specific characteristics: emotional insensitivity ("hard as ice, dull as leather"), lack of affective resonance for the environment, offensive rejection of interaction with the environment, ironic coolness, quirky, grumpy stubbornness, brutal, active misanthropy.

If we compare the description of characteristics of the anaesthetic and hyperaesthetic schizothymys with the characteristics of the *Actor* and *Contemplator* classes of the action-attitude, see chapter 2 above, we find that

- 3) the anaesthetic schizothymys are Actors (anaesthetic) and Introverts (schizothymys), and
- 4) the hyperaesthetic schizothymys are Contemplators (hyperaesthetic) and Introverts (schizothymys).

Thus, we also find that the psychaesthetic proportion of schizothymys according to E. Kretschmer corresponds to the action-attitude introduced in the present work.

In [2], chapter 11 some concrete schizothymic types are also described as examples. The comparison of the personality profiles described there allows a clear overlap with the MBTI and socionics types:

- Sensitive, affect-lame type (Kretschmer: Empfindsam-affektlahmer) ⇔ iNTp (MBTI) ⇔ ILi (socionics),
- Subtle-minded, cool aristocratic type (Kretschmer: Feinsinnig-kühler Aristokratentypus) ⇔ iSFp (MBTI) ⇔ SEi (socionics),
- Pathetic idealist type (Kretschmer: Pathetischer Idealistentypus) ⇔ iNFp (MBTI) ⇔ IEi (socionics),
- Cold despot type (Kretschmer: Kalter Despotentypus) ⇔ iSTj (MBTI) ⇔ LSi (socionics),
- Irascible-dull type (Kretschmer: Jähzornig-stumpfer Typus) ⇔ iSFj (MBTI) ⇔ ESi (socionics),
- Absent-minded drifter type (Kretschmer: Zerfahrener Bummler Typus) ⇔ iNTj (MBTI) ⇔ Lli (socionics).

On the universal psychic coordinate system the following classification of Kretschmer's typology results:

¹³ i.e. in addition to the general characteristics of schizothymys

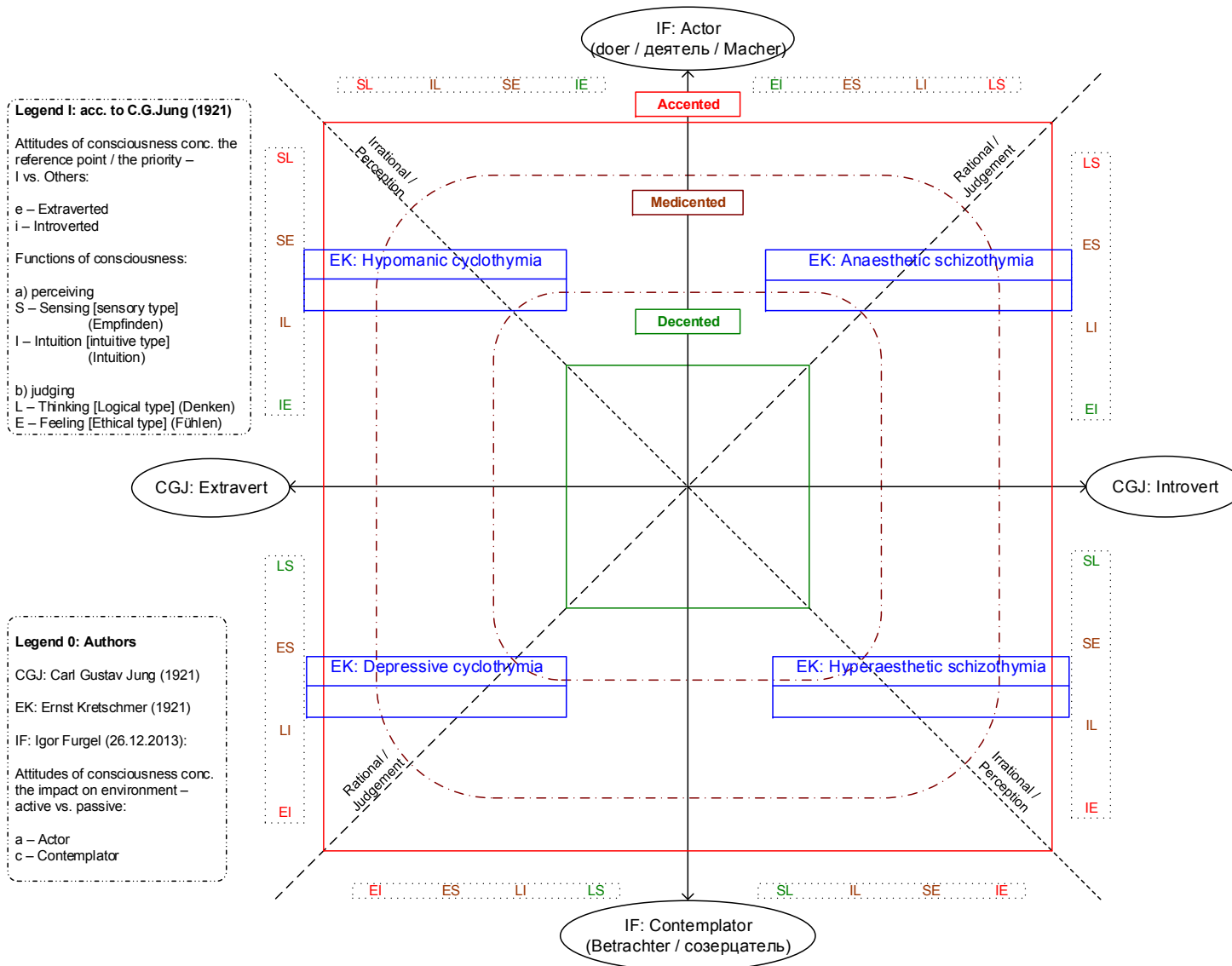


Figure 4: Typology according to E. Kretschmer in the universal psychic coordinate system

Thus, we conclude that the psychological typology of E. Kretschmer can be adequately represented on the universal psychic coordinate system.

It is important to note that each of the four basic psychological types (temperaments according to E. Kretschmer) of Kretschmer's typology covers some finer differentiable types. If, for example, one compares this typology with that of socionics, each Kretschmer type comprises four socionics types: for example, the hyperaesthetic schizothyme comprises all contemplative introverts: IEi, ILi, SEi and SLi.

Now it is obvious why E. Kretschmer starts the description of his temperaments with *accented* types (chap. 9 to 11 in [2]): His typology was mainly derived from the analysis of medical records. He was also absolutely aware of this. In chapter 12 of [2] he describes the characteristics of cyclothymic and schizothymic average people. We leave it to the interested reader to assign these "average types" to the 16 MBTI or socionics types.

4.3 Fritz Riemann

As a psychoanalyst and psychotherapist, F. Riemann observed his patients over several years. Since his young years he also dealt with astrology. These two interests and ways of thinking led him to the idea of identifying four basic forms of anxiety and typifying human characters accordingly. He wrote down his thoughts and insights in his fundamental work [3].

His work was created almost 50 years later than the corresponding works of C.G. Jung and E. Kretschmer. Although he makes no direct reference to C.G. Jung or E. Kretschmer in [3], it is inconceivable that he did not know their works. In fact, he refers to a possible connection between personality structures and physique (an obvious allusion to E. Kretschmer) and delimits his approach from that, see [3], p. 30.

F. Riemann had a completely different basis for his classification system: he connected the psychological types he identified with various basic forms of anxiety.

Already in the "Introduction" to [3] F. Riemann introduces the following four basic forms of anxiety:

- 1) "The anxiety of self-giving (Selbsthingabe), experienced as ego-loss and dependency;
- 2) The anxiety of self-realisation (Selbstwerdung), experienced as insecurity and isolation;
- 3) The anxiety of change (Wandlung), experienced as transience and uncertainty;
- 4) The anxiety of necessity (Notwendigkeit), experienced as finality and lack of freedom".

F. Riemann derives these four basic forms of anxiety from four basic demands to which we are (must be) subjected in our existence, whereby these four demands represent two antinomies. For the sake of better readability, we have reproduced these fundamental demands and commented on them here.

“The first demand...is that we should become a unique individual, affirming our own identity and setting ourselves apart from others, that we should become distinctive personalities, not interchangeable mass human beings. But with it all the anxiety is given, which threatens us, if

we differ from others and thus fall out of the security of belonging and community, which would mean loneliness and isolation.”

The anxiety that arises from meeting this demand is the anxiety of self-realisation, which is experienced as insecurity and isolation (the basic anxiety #2 above).

"The second demand ... is that we should open ourselves to the world, to life and to our fellow human beings with confidence, that we should get involved with the not-me, the stranger, that we should enter into an exchange with outside-us-beings. ... But this is connected with all the anxiety of losing our ego, of becoming dependent, of surrendering ourselves, of not being able to live our own being adequately, of having to sacrifice it to others and of having to give up too much of ourselves in the required adaptation".

The anxiety that arises from fulfilling this demand is the anxiety of self-giving, which is experienced as loss of oneself and dependency (the basic anxiety #1 above).

These two basic anxieties form the first Riemann antinomy, which, above all, can be mapped 1:1 to a necessary standard antinomy of any system: the inside of the system vs. the outer outside the system. This standard antinomy of each system is necessary to distinguish the system from all other systems¹⁴.

Already in the analysis of these two basic demands and basic anxieties, it is immediately apparent that they are very affinitive to the reference-point-attitude, because the latter precisely depicts the span and complementarity between ego and non-ego, see chapter 2 above.

Individuals, in whom the anxiety of self-giving is prevalent, fight it by orienting themselves towards themselves (ego-, subject-oriented; *introverts*). Individuals, in whom the anxiety of self-realisation is prevalent, fight it by orienting themselves towards their environment (non-self-, object-oriented; *extraverts*).

These two basic demands are at the same time also affinitive to the action-attitude, in so far as they do not presuppose an active influence on the environment: the anxiety of self-giving is combated by self-isolation from the environment (ultimate: "I am completely independent from the environment"), the anxiety of self-realisation - by merging with the environment (ultimate: "I am completely united with the environment"). That is, the individuals, in whom one of these two basic anxieties prevail, are *Contemplators*, see chapters 2 and 3 above.

We continued our analysis with the second Riemann antinomy of basic anxieties.

“The third demand... is that we should strive for permanence. We are supposed to settle down and furnish in this world, to plan for the future, to be thrusting, as if we were to live indefinitely, as if the world were stable and the future predictable... With this demand to last, ... to have a future at all, ... all the anxieties are given that are connected with the knowledge of transience, of our dependence and of the irrational unpredictability of our existence: the anxiety of the risk of the new, of planning into the unknown, of abandoning oneself to the eternal flow of life...”.

¹⁴ s. [8], chap. 4.2, sec. A2

The anxiety that arises from meeting this demand is the anxiety of change, which is experienced as transience and unsteadiness (the basic anxiety #3 above).

"And finally the fourth demand... we should always be ready, to change, to affirm changes and developments, to give up the familiar, to leave traditions and accustomed things behind us, to release ourselves again and again from what we have just achieved and to take leave, to experience everything only as a transition. With this demand to always develop ourselves further in a living way, ... not to stick, to be open to the new and to dare to discover the unknown, there is now connected the anxiety of being held fast by orders, necessities, rules and laws, by the maelstrom of the past and habit, of being constricted, limited in our opportunities and our desire for freedom. So, in contrast to the anxiety described above, where death appeared as transience, death threatens here as torpor and ultimacy".

The anxiety that arises from following this demand is the anxiety of necessity, which is experienced as finality and lack of freedom (the basic anxiety #4 above).

This second pair of basic anxieties forms the second Riemann antinomy, which, above all, can be mapped 1:1 to another necessary standard antinomy of each system: stability vs. instability of the system (state vs. process or responsibility for action vs. freedom of choice). This standard antinomy of any system is necessary for the system to evolve¹⁵.

Already in the analysis of these two basic demands and basic anxieties, it is immediately noticeable that they are affinitive to the action-attitude, in so far as these two basic demands presuppose an active influence on the environment: both the anxiety of change and the anxiety of necessity are directly connected with the perception of the passage of time in the environment. For this reason, the individual is necessarily dependent on actively influencing the environment in order to be able to manipulate the perception of this passage of time in order to combat both anxieties. I.e. the individuals, in whom one of these two basic anxieties prevail, are *Actors*, see chapters 2 and 3 above.

These two basic anxieties are at the same time also affinitive to the reference-point-attitude, because the latter represents exactly the span and the complementarity between ego and non-ego, see chapters 2 and 3 above. In the current context, the question arises whether the individual, in manipulating the perception of the passage of time, tunes his environment to himself (ego, *introvert*) or tunes his own behaviour to the environment (non-ego, *extravert*).

In the further chapters of [3], F. Riemann describes four personality profiles that he assigns to the four basic anxieties he has defined.

We will only summarize the main characteristics of these four personality profiles here in order to answer the question whether the Riemannian personality profiles can be adequately represented on the universal psychic coordinate system.

¹⁵ s. [8], chap. 4.2, sec. A1

a) The schizoid personalities

With these individuals, the anxiety of the self-giving is prevalent. The following characteristics of the psychological profile can be derived from the description dedicated to this type in [3]:

The point of reference is one's own ego (introvert); the individual wants to keep his environment at a distance, may be inclined towards hermitism; is independent; can be both competitive and cooperative, depending on the circumstances; takes responsibility for his actions; is more spontaneous in his decisions; believes in his own specialness ("the finiteness of all others does not concern me")¹⁶ and is more passive in influencing his environment (contemplator).

These characteristics unmistakably indicate that schizoid personalities according to F. Riemann are introverted and contemplative.

b) The depressive personalities

With these individuals, the anxiety of self-realisation prevails. The following characteristics of the psychological profile can be derived from the description dedicated to this type in [3]:

The point of reference is the environment, the non-ego (extravert); the individual wants to be united with his environment, might tend to humility, is dependent on and cooperative with the environment; shifts the responsibility for his decisions to others; is more deliberate in his decisions; believes in the "ultimate rescuer" ("I will be saved by him at the end of days after all")¹⁶ and is more passive in his influence on his environment (contemplator).

These characteristics unmistakably indicate that the depressive personalities according to F. Riemann are extraverted and contemplative.

c) The compulsive personalities

In these individuals the anxiety of change prevails. The following characteristics of the psychological profile can be derived from the description dedicated to this type in [3]:

The passage of time is blocked out by the "freezing" of the environment or the time standstill is faked by this. The "freezing" of the environment presupposes the exercise of power, therefore the individual has to actively influence the environment (doer, actor); when "freezing" the environment, the individual takes himself as a benchmark (introvert). Great importance is attached to the preservation of form. The individual is competitive, may be prone to arrogance; is more deliberate in his decisions; prefers the past and freedom of action, because there everything is already determined.

These characteristics unmistakably indicate that compulsive personalities according to F. Riemann are introverted and active.

d) The hysterical personalities

¹⁶ This term was introduced by I. Yalom in [10]

With these individuals, the anxiety of necessity prevails. The following characteristics of the psychological profile can be derived from the description dedicated to this type in [3]:

The passage of time is masked out by the "freezing" of inner maturity (one remains childish) and by an intensive change of events ("always something new"), or the standstill of time is felt through this. The intensive event change in the environment must be actively brought about, therefore the individual must actively influence the environment (doer, actor); when forcing the event change in the environment, the individual tunes into the environment (extravert). The external form of presentation is very important (assuming different roles). The individual can be both cooperative and competitive, depending on circumstances; may be prone to vanity; is more spontaneous in his decisions; prefers the future and freedom of choice, because everything is still possible there.

These characteristics unmistakably indicate that hysterical personalities according to F. Riemann are extraverted and active.

On the universal psychic coordinate system the following classification of Riemann typology results:

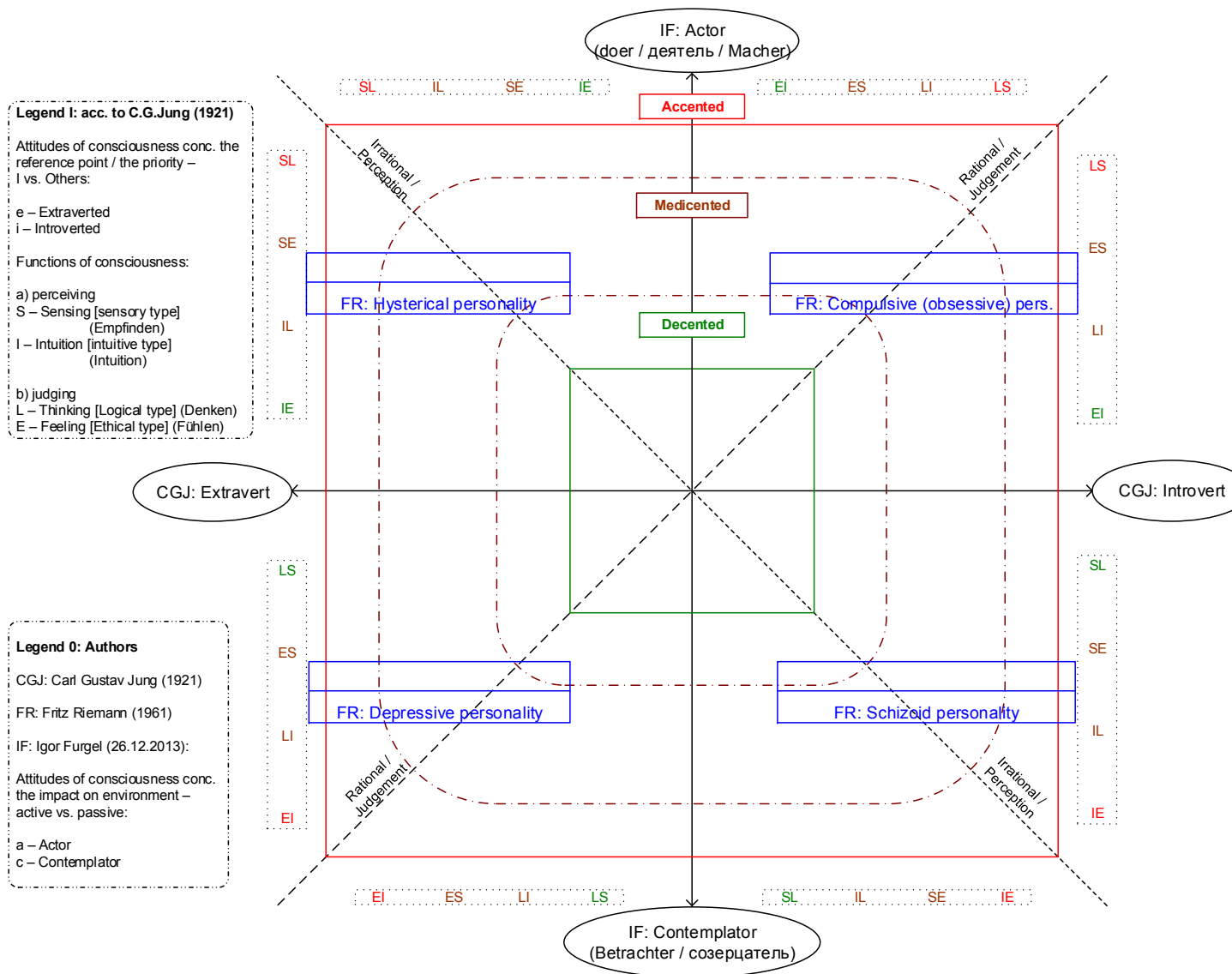


Figure 5: Typology according to F. Riemann in the universal psycho coordinate system

Thus, we come to the conclusion that the psychological typology of F. Riemann can be adequately represented on the universal psychic coordinate system.

It is important to note that each of the four psychological types (personalities according to F. Riemann) of the Riemann typology covers some finer differentiable types. For example, if we compare this typology with that of socionics, each Riemann type includes four socionics types: for example, the depressive personality includes all contemplative extraverts: LSe, ESe, LIe and ELe.

4.4 The Existential Angst and Adaptation

Fritz Riemann begins the introduction to [3] with the following words: "Angst is inevitably part of our lives. In ever new variations it accompanies us from birth to death. The history of humanity reveals again and again new attempts to cope with, reduce, overcome or bind angst. ... It remains one of our illusions to believe that we can live a life without angst; it belongs to our existence and is a reflection of our dependencies and the knowledge of our mortality. We can only try to develop counterforces against them: courage, trust, knowledge, power, hope, humility, faith and love. These can help us to accept angst, to deal with it, to defeat it again and again. Methods of any kind that promise us freedom from angst should be viewed with scepticism; they do not do justice to the reality of human existence and raise illusory expectations".

Already these first sentences of the introduction place F. Riemann in the ranks of existentialists who are prominently represented in the world of psychiatry and psychotherapy by Viktor Frankl and Irvin Yalom. The spiritual approach of existential psychotherapy ties in with existential philosophy.

Existential angst is precisely what makes man as a species to human being, i.e. what distinguishes him from all other beings. It arises from the fact that man is able to reflect on his own future, including his own finiteness as a holistic system¹⁷.

Therefore, it seems quite plausible to us that there is a significant correlation between the psychological types and the basic forms of anxiety (of existential angst), see chapter 4.3 above.

We now look again at the four basic forms of anxiety introduced by F. Riemann in the introduction to [3]:

- 1) "The anxiety of self-giving (Selbsthingabe), experienced as ego-loss and dependency;
- 2) The anxiety of self-realisation (Selbstwerdung), experienced as insecurity and isolation;
- 3) The anxiety of change (Wandlung), experienced as transience and uncertainty;
- 4) The anxiety of necessity (Notwendigkeit), experienced as finality and lack of freedom",

¹⁷ Beings other than humans merely reflect their current state, which depends only on their previous (but not future!) states.

and now ask ourselves how these basic forms of anxiety are psychologically coped with / blocked out by individuals.

In view of the fact that the existential angst ultimately arises from the self-reflection of the human being's own finiteness, its four basic forms must be somehow connected with the passage of time.

Every living being already has a mechanism that is related to the passage of time - the adaptation mechanism. As was convincingly shown in [11], the adaptation mechanism is of immense importance for the further development of an individual.

Is there therefore possibly an affinity between existential angst and the adaptation mechanism? To answer this question, we first analyse the relationship between adaptation and intro- /extra-centricity (orientation).

The stronger the adaptation mechanism, the faster and more flexible (i.e. to a wider range of environmental changes) a system can adapt to its environment, and vice versa.

This means that a strong adaptation mechanism promotes the unification of the system with its environment, whereas a weak adaptation mechanism promotes the isolation of the system from its environment.

As we have already noted in chapters 2 and 3, these are in fact the two attitudes, the action-attitude and the reference-point-attitude, which most strongly characterize the character of the relation "isolation vs. unification" ("the interior vs. the exterior") between the individual and his environment. It is precisely the character of the relation "the inside vs. the outside" that determines the character of the interaction respectively the character of the communication of each system with its environment.

If we theoretically imagine the "absolute adaptation", it would lead to the absolute, one hundred percent unification of the system with its environment (that is why the "absolute adaptation" practically cannot exist).

The "absolute non-adaptation" ("zero adaptation"), which is practically impossible, would lead to the absolute, one hundred percent isolation of the system from its environment.

The stronger the adaptation mechanism is, i.e. the faster and more diverse (flexible) the adaptation is, the faster the internal clock of the system has to tick, the more the passing of external time is perceived as slow and the more the system opens itself to the environment. In the theoretical limit of "absolute adaptation", this led to the stopping of the external time flow from the inner view of the system and to the absolute fusion of the system with the environment (and therefore to its complete indistinguishability from the environment, which is equivalent to the non-existence of the system).

The weaker the adaptation mechanism is, i.e. the slower and more limited (inflexible) the adaptation is, the slower the internal clock of the system must tick, the more the passing of external time is perceived as fast and the more the system isolates itself from the environment. In the theoretical limit of "zero-adaptation", this led to the stopping of the inner time flow from the inner viewpoint of the system and to the absolute isolation of the system from the environment (and therefore to its complete imperceptibility by the environment, which in turn is equivalent to the non-existence of the system).

Thanks to adaptation, a system itself always perceives its own lifespan as neither too long nor too short, but rather as "in the middle range".

Now we return to the basic forms of existential angst and discuss their connection with the passage of time and adaptation.

Two groups can be distinguished here:

Group A (Contemplators): The (outer) time progresses, but

A1: I myself am not affected at all, because I am an exceptional phenomenon (see own "specialness" according to I. Yalom, see [10]).

This method of suppression is effective against *the anxiety of self-giving*: with the feeling of one's own exclusivity, the individual has no motivation for adaptation – “after all, I am an exceptional person, therefore I am self-sufficient; so why should I bother to devote my resources to adaptation if I have everything anyway; why should I give myself to the environment?” A weak adaptation mechanism is sufficient for this.

That is why this method of suppression is mainly used by schizoid personalities according to Riemann, see chapter 4.3 (by hyperaesthetic schizothymics according to Kretschmer, see chapter 4.2), i.e. used by *introverted* and *contemplative* individuals.

A2: I am saved by an ultimate rescuer at the end of the days ("ultimate Rescuer" according to I. Yalom, see [10]).

This method of suppression is effective against *the anxiety of self-realisation*: the individual is sure that he or she will be saved by an external "ultimate rescuer". Starting from this motivation of rescue (from death) from outside, the individual dissolves into his environment as far as possible - "why should I strive for my own identity / individuality when I am rescued anyway by an external "ultimate rescuer". For this, the individual needs a strong adaptation mechanism.

Therefore, this method of suppression is mainly used by depressive personalities according to Riemann, see chapter 4.3 (by depressive cyclothymics according to Kretschmer, see chapter 4.2), thus used by *extraverted* and *contemplative* individuals.

Group B (Actors): Faking / feeling the time standstill

B1: The time standstill is faked. To this end, the external world is left unchanged, "conserved" and forcibly mothballed.

This suppression method is effective against *the anxiety of change*: the passage of time goes unnoticed because the environment of the individual - forced by the latter - remains unchanged.

To enable this method of suppression, the adaptation mechanism of the individual must be weak (see "zero-adaptation" above), so that sufficient isolation of the individual from the environment is achieved.

Therefore, this method of suppression is mainly used by compulsive personalities according to Riemann, see chapter 4.3 (by anaesthetic schizothymics according to Kretschmer, see chapter 4.2), i.e. used by *introverted* and *active* individuals.

B2: The time standstill is felt. For this purpose, the individual distracts himself in such a way, e.g. through hyperactivity that the passage of time is internally repressed and, thus, remains unnoticed.

This method of suppression is effective against *the anxiety of necessity*: the individual strings together various external events so intensively that the passage of time goes unnoticed internally.

To enable this method of suppression, the adaptation mechanism of the individual must be strongly developed (see "absolute adaptation" above), so that a sufficient dissolution of the individual in the environment is achieved.

That is why this method of suppression is mainly used by hysterical personalities according to Riemann, see chapter 4.3 (by hypomanic cyclothymics according to Kretschmer, see chapter 4.2), i.e. used by *extraverted* and *active* individuals.

Thus, we find that every basic form of existential angst is actually related to the passage of time and the adaptation of individuals.

Regardless of the action-attitude (Actor or Contemplator), extraversion correlates with "absolute adaptation" and introversion - with "zero adaptation", see above.

On the other hand, regardless of the reference-point-attitude (extraversion or introversion), Actors (makers) fake the standstill of time (active), whereas Contemplators ignore the passage of time (passive).

The next question we ask ourselves is then: What in the respective correlate is more likely to be the cause, and what is more likely to be the effect? Is "absolute adaptation" the cause of extraversion? Is "zero adaptation" the cause of introversion? Or vice versa? Or is each respective pair - as the effect of something third - a firm complex? The last variant is exactly the case:

An introvert prioritizes itself over its environment - so why should he/she spend its resources on adaptation? On the other hand, someone who has a weak adaptation mechanism has no other choice than to prioritize himself.

An extravert prioritizes his/her environment - so he is dependent on being able to adapt well. On the other hand, someone, who has a strong adaptation mechanism, spends fewer resources if he prioritizes his environment.

The minimum consumption of resources should therefore be the key, the decisive primary factor here, because this would correspond to the universal principle of nature, see [8], chapter 3. If it is true, then

- 1) a weak adaptation mechanism results from the introversion (save resources if I am an introvert => weak adaptation), and
- 2) the extraversion results from a strong adaptation mechanism (save resources if I have a strong adaptation mechanism => extraversion).

An inadequate combination of {introversion and simultaneously strong adaptation mechanism} or of {weak adaptation mechanism and simultaneously extraversion} inevitably leads to high resource consumption. Thus, such combinations are not statistically sustainable and should therefore, through the statistical mechanism of natural selection, occur rarely/marginally in a population.

An introvert with a strong adaptation mechanism will never be able to come to his inner world; an extravert with a weak adaptation mechanism will never be able to dissolve in his environment. Both would definitely lead to considerable (pathologically pronounced and persistent, because not resolvable) existential anxieties.

4.5 Universal Classification System of Psychological Types

In the previous chapters, we have developed the universal psychic coordinate system and found out that all common typologies of individuals can be adequately and naturally represented on this psychic coordinate system.

We now put all these typologies together:

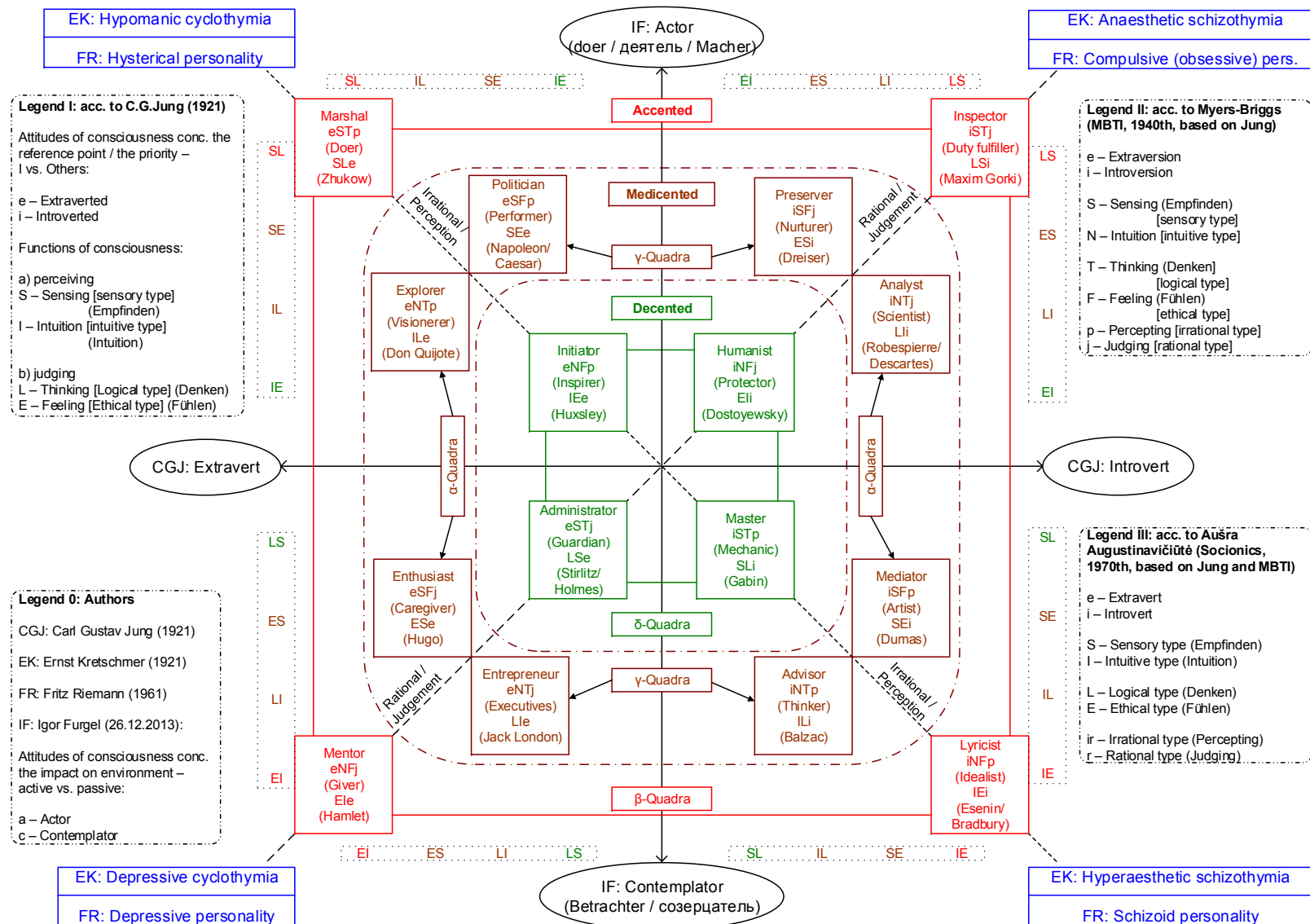


Figure 6: Universal classification system of psychological types acc. to I. Furgel

Figure 6 shows the typologies - according to C.G. Jung (with refinements by the Myers-Briggs Type Indicator and by socionics), according to E. Kretschmer and according to F. Riemann - mapped on the universal psychic coordinate system we have conceived in this work.

Figure 6 makes it possible to visualize and understand the relationships or similarities between these different typologies. Explanations of the single typologies can be found in chapters 4.1, 4.2 and 4.3 above.

This allows the interested reader to decide for himself, which concrete typology he/she should use for his/her specific concern. Thanks to the universal classification system, it is always possible to determine how a result from one typology shall be translated into another typology.

At this point we would like to emphasize - following C.G. Jung, I. Myers and K. Briggs, A. Augustinavičiūtė, E. Kretschmer and F. Riemann - that there can be no "pure" types among real individuals. Every personality is unique. Psychological types are the expected values for the communication profiles of a statistically large number of individuals.

It is also important to note that the psychological type of an individual is a very stable characteristic of his/her personality. Nevertheless, the type of an individual is subject to change in the course of life. This transformation takes place as time progresses, but can also be triggered by very significant life events.

For example, in part 2 of [2], E. Kretschmer states that the so-called psychaesthetic proportion of a schizothymic often changes slowly and irreversibly from hyperaesthesia to anaesthesia in the course of life, whereas the so-called diathesis proportion of a cyclothymic often oscillates cyclically between hypomania and depression. These two types of proportional shifts refer to the action-attitude and occur between the two classes {Actor, Contemplator}, see Figure 6.

Our experience shows that proportional shifts can also occur on the axis {Extravert, Introvert} of the reference-point-attitude in the course of life.

Such shifts in proportion along the two axes in Figure 6 might be obviously easier, and therefore more frequent, for the decented types than in the case of the accented types.

The psychological type of an individual is certainly very stable, but not static.

The universal psychic coordinate system was derived from the abstract communication model between the individual and his environment. It has been shown that the attitudes and communicative functions of an individual as perceived by the environment represent a necessary and sufficient set.

Therefore, we assume that the universal psychic coordinate system also provides an adequate framework for all typologies that may be designed in the future.

5 Summary

C.G. Jung introduced introversion and extraversion as very perceptible attitudes of an individual regarding his interaction with the environment.

In this work, we set out to find an additional psychological criterion that should be used as an additional classificatory feature if different psychological typologies are to be adequately represented.

This additional classificatory characteristic is the additional psychological attitude - the action-attitude. The action-attitude reflects the second pair of perceptible dispositions of an individual regarding his interaction with the environment - "actor" (doer, active) and "contemplator" (observer, passive).

Based on these two attitudes - reference-point-attitude {Extravert, Introvert} and action-attitude {Actor, Contemplator} - we have conceived the universal psychic coordinate system (UPCS).

The universal psychic coordinate system makes it possible to adequately depict different typologies, which are also based on completely different approaches.

We have shown that the well-known typologies according to C.G Jung, E. Kretschmer, F. Riemann, Myers-Briggs Type Indicator and socionics can be easily represented on the universal psychic coordinate system.

The novelty of this work is that

- i) The attitudes and communicative functions of an individual as perceived by the environment have been derived from the abstract communication model between the individual and his environment as the necessary and sufficient set,
- ii) The second additional action-attitude with the classes {actor, contemplator} – founded in the abstract communication model – has been introduced,
- iii) The universal psychic coordinate system has been introduced,
- iv) A gradation for the degree of psychotypical accentuation of individuals has been introduced as follows: accented -> medicented -> decented. It was shown which psychological types have which degree of psychotypical accentuation,
- v) A clear connection between specific manifestations of existential angst, adaptation mechanism and the principle of the minimum consumption of resources has been shown.

We assume that the universal psychic coordinate system also provides an adequate framework for all typologies that may be designed in the future. It can even serve as a criterion for the adequacy of such future typologies.

6 Glossary

Term	Definition
<p>psychological type</p> <p>GER: psychologischer Typ</p>	<p>The statistically expected communication profile of a person</p>
<p>Basic functions of consciousness</p> <p>GER: Grundfunktionen des Bewusstseins</p>	<p>Functions of the communicative sub-process of the consciousness of an individual:</p> <p>Perceiving: the <i>sensing</i> and the <i>intuition</i>; Judging: the <i>feeling</i> and the <i>thinking</i>.</p> <p>By sensing, C.G. Jung understands all perceptions by the sensory organs; by intuition - the perception by unconscious means or the perception of unconscious contents; by feeling, he understands a function of subjective evaluation and by thinking - the function of intellectual cognition and logical deduction.</p>
<p>Reference-Point-Attitude</p> <p>GER: Bezugspunkt-Attitude</p>	<p>Priority setting (authority) in decision-making: "To whom do I as an individual attach a higher priority – to the external environment or to the internal knowledge? What is more important for me - the I-authority or the Others-authority?"</p> <p>C.G. Jung called the two corresponding complementary classes of the <i>reference-point-attitude extraversion</i> and <i>introversion</i>.</p>
<p>Action-Attitude</p> <p>GER: Aktions-Attitude</p>	<p>Individuals' propensity to influence or not to influence their environment: "Should I react to the impulses from the environment or is it enough for me to have simply gained a new insight? Should I enforce my vision or opinion outside or leave it alone? Should I <u>actively shape</u> the environment around me or <u>passively contemplate</u> it?"</p> <p>The two complementary classes of <i>Action-Attitude</i> we called <i>Actor</i> and <i>Contemplator</i>.</p> <p>The term was at first introduced in this work.</p>
<p>Extraversion</p>	<p>according to C.G. Jung:</p> <p>A class of <i>Reference-Point-Attitude</i> that denotes the inner attitude of individuals who draw their motivations mainly from their <u>environment</u>.</p>
<p>Introversion</p>	<p>according to C.G. Jung:</p> <p>A class of <i>Reference-Point-Attitude</i> that denotes</p>

Term	Definition
	the inner attitude of individuals who derive their motivations mainly from their <u>inner circumstances</u> .
Actor	<p>A class of <i>Action-Attitude</i>, which refers to the inner attitude of individuals who <u>actively</u> shape their environment.</p> <p>The term was at first introduced in this work.</p>
Contemplator	<p>A class of <i>Action-Attitude</i>, which refers to the inner attitude of individuals who <u>passively</u> contemplate their environment.</p> <p>The term was at first introduced in this work.</p>
<p>universal psychic coordinate system (UPCS)</p> <p>GER: universelles Psychokoordinatensystem</p>	<p>A coordinate system based on the classes of the <i>Reference-Point-Attitude (Extraversion, Introversion)</i> and the <i>Action-Attitude (Actor, Contemplator)</i>.</p> <p>It enables an adequate classification of different psychological typologies, which are also based on completely different approaches.</p> <p>It was derived from the abstract communication model between the individual and his environment.</p> <p>The term was at first introduced in this work.</p>
Accented (psychotypes)	<p>The subgroup of <i>psychological types</i> furthest from the coordinate origin of the <i>universal psychic coordinate system</i>;</p> <p>the corresponding properties of the complementary classes are therefore most pronounced.</p> <p>The term was at first introduced in this work.</p>
Decented (psychotypes)	<p>The subgroup of <i>psychological types</i> closest to the coordinate origin of the <i>universal psychic coordinate system</i>;</p> <p>the corresponding properties of the complementary classes are therefore the weakest.</p> <p>The term was at first introduced in this work.</p>
Medicented (psychotypes)	<p>The subgroup of <i>psychological types</i> between the <i>accented</i> and the <i>decented</i>, i.e. with the characteristics of the complementary classes pronounced in the middle grade.</p> <p>The term was at first introduced in this work.</p>
Knowledge-ability	The result of one's own cognition process in a form that is <u>not</u> suitable for the individual's

Term	Definition
GER: Kenntnis	<p>communication with the environment (before the post-semantic synthesis, see Figure 1 above)¹⁸.</p> <p><i>Knowledge-ability</i> always requires a composition of <i>knowledge</i> and skill.</p> <p>See [9] for further information on this topic.</p>
<p>Knowledge (communicable knowledge)</p> <p>GER: Wissen</p>	<p>The result</p> <ul style="list-style-type: none"> - of the process of taking up/recepting and storing external information, as well as - of the own cognition process <p>in a form that is <u>specially adapted</u> for the communication of the individual with the environment (after the post-semantic synthesis, see Figure 1 above)¹⁹.</p> <p><i>Knowledge</i> is a set of information that can be retrieved and reproduced from memory.</p> <p><i>Knowledge</i> is always communicable, i.e. it is represented in a form that can be meaningfully processed by other persons (by the intended members of the environment). Therefore, the terms "knowledge" and "communicable knowledge" can be used synonymously in the context of this work.</p> <p>See [9] for further information on this topic.</p>

¹⁸ In English and Russian, there is no exact term for German "Kenntnis". Semantically closest to this term, it can be translated as "knowledge-ability" (not knowledgeability!) and as "знание-умение", respectively.

¹⁹ In English and Russian, the German term "Wissen" is fairly accurately represented by "knowledge" and "знание", respectively. In order to distinguish "Wissen" and "Kenntnis" terminologically in these languages, the terms "communicable knowledge" and "передаваемое знание" can be used for "knowledge".

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