

## Digital Human – Introduction

*Pietro Elisei, Vasily Popovich, Manfred Schrenk, Tatiana Popovich, Ivan Griaznykh*

(Dr. Pietro Elisei, President – ExCom member, ISOCARP, Netherlands, elisei@isocarp.org)

(PhD Vasily Popovich, IST BUREAU LLC., vp617616@gmail.com)

(DI Manfred Schrenk, CORP – Consulting Research Projects, 1200 Vienna, Austria, schrenk@corp.at)

(PhD Tatiana Popovich, IST BUREAU LLC., bonixpavlova@gmail.com)

(Ivan Griaznykh, IST BUREAU LLC., gryaznykh.ivan@gmail.com)

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### 1 ABSTRACT

In this article we return again to the idea of representing a person in the modern digital world. In order to make the formalization more correct and meaningful, the classical philosophical heritage was first studied and the conceptual models of a man were formed based on the views of leading philosophers of the past and present. Due to understandable limitations, only a portion of the research in the field of philosophy is presented here. Taking into account modern achievements in computer science, especially in the field of AI, it is proposed to consider a computer model of a person consisting of two phenomena: a human profile and a trace. A computer can work with these concepts, despite the complexity and ambiguity in the minds of many people.

Keywords: digital world, digital human, individual profile, individual track, social group

### 2 INTRODUCTION

We began this study in 2008 as part of a project commissioned by the US Department of Homeland Security [1]. Because the topic of the project was not directly related to this type of research, it developed rather slowly, sporadically and without serious funding. However, the relevance of this topic is increasing; the successes of such a company as Palantir (USA) [11], confirm the wide interest in such work in the world. It is symbolic that the creation of Palantir coincided with the implementation of our project, thereby confirming the correctness and relevance of such research. In this article we present our self-initiated research in this field, by presenting a new stage in the development of this project in the form of a concept and methodology for building practical systems of such kind in the interests of a wide range of customers. This topic is the ideological basis of our practical work – an intelligent social network that exists in a test version and we hope for its early release for a wide range of users and interested customers. In our previous works, we examined such concepts as “individual” and “collective”, their fundamental ideas, such as “profile”, “trace”, individual and collective “unconscious”. In this article we will try to transform theoretical concepts into forms of elements of computer models, ready for implementation in the form of software tools and scenarios for their use. Once again, we present here the basic concepts of our approach, formalized and with a visual interpretation.

### 3 PHILOSOPHY OF HUMAN

Before we begin to present a man as an element of the modern digital world, let us turn to the history of philosophy and present the abstract essences of man, formed by famous philosophers. Let us immediately make a reservation that this is our simplified, brief presentation of the ideas of great philosophers in a graphic interpretation. This is a general, conceptual view of man from different philosophers. We also compiled such simplified models for the purpose of further digital interpretation. To fully consider this topic, a different presentation format is needed, at least in the form of a monograph.

#### 3.1 Model of B. Spinoza

The work of B. Spinoza [2] is surprising for a number of reasons. But what is most impressive is his presentation style – it is based on an axiomatic approach. Let us note that formally the first axiomatic approach known to us was formed as a system of geometry described by Euclid in “Elements” approximately 300 years BC. Consciously, the understanding of axioms as a certain set of statements that do not require proof was formed by the middle of the 19th century. Spinoza's idea is shown graphically in Fig. 1-4, (see below). Our interpretation of this model is shown in Fig. 4. Main conclusions from the ideas of B. Spinoza are the following:

(1) Man has a threefold structure: body, soul and spirit.

(2) Spinoza showed some mechanisms of human interaction with nature and the essence of pre-established limitations.

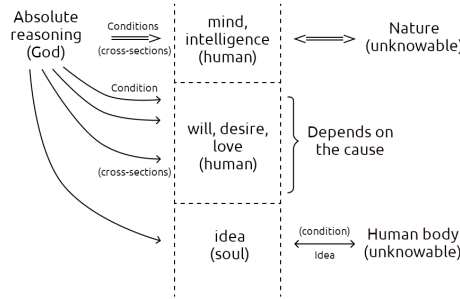


Fig. 1: Model of a human

Limitation of the paper do not allows us make detailed explanations of the figures. But we hope that the rule “a one picture is equal to thousands words” is true. Also it is possible to read original works of Spinoza and other philosophers. Let us present Spinoza’s process (process of cognition) in Fig. 2.

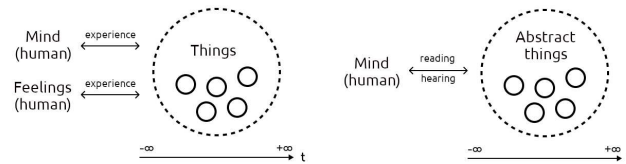


Fig. 2: Cognition of the 1st kind (opinion or objection). The source of falsity

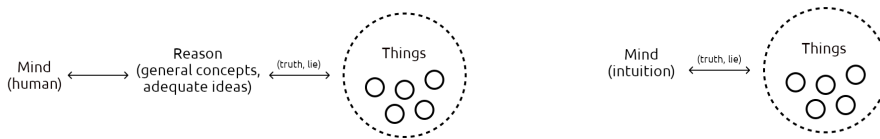


Fig. 3 (left): Cognition of the 2nd kind. Fig. 4 (right): Cognition of the 3rd kind

Using up-to-date terminology: Spinoza’s process can be interpreted as a business analytics of a human. And one very important remark: there exists a difference between the soul of a man (M) and a soul of a woman (W). Both halves are present in man and in woman, however, one part dominates the other (M over W or the other way around). M – are digital. W – analog.

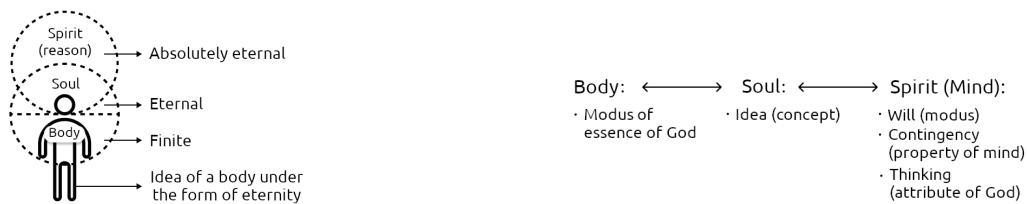


Fig. 5 (left): Interpretation of Spinoza’s ideas. Fig. 6 (right): Attributes of entities

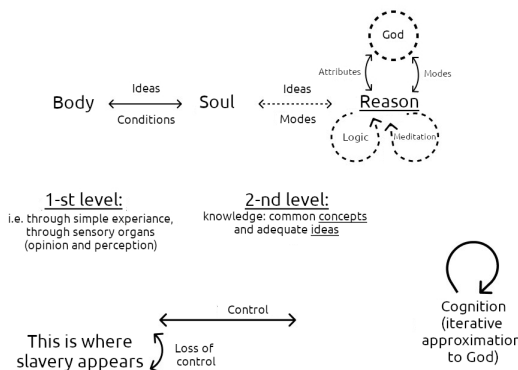


Fig. 7: Processes of cognition for human

### 3.2 Model of R. Descartes

Descartes clearly highlights the concept of “mind” and also tries to discover the mechanism of human interaction with nature through reason [7]. Thinking is perceived as a category containing the following elements: understand, desire, feel. The soul is perceived by him as a certain set of ideas. Descartes distinguishes between the concept of soul and reason. Reason shapes a person's judgments. The will forms relations towards things. Things are a symbiosis of intellectual (mental) and material entities of the world and consciousness. The symbiosis of soul and body forms such concepts as hunger, thirst, etc. Passions of the soul: anger, joy, sadness, love, ... Feelings: pain, itching, tickling, ...

### 3.3 Model of I. Kant

Kant considers nature as a “thing in itself” [9]. The main attention is paid to the processes of human consciousness.

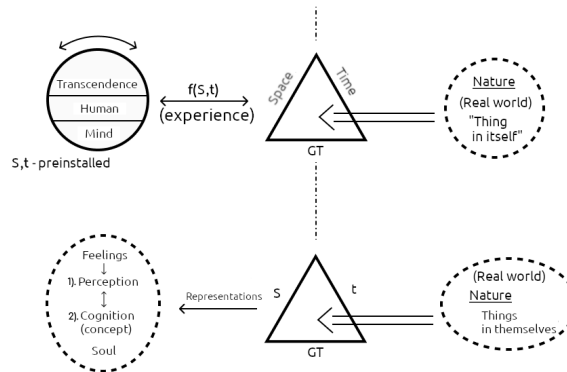


Fig. 8: Interaction of a Human – real World

Let us regard this process below:

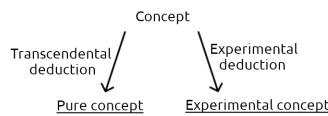


Fig. 9: The process of cognition

Determining the subject of cognition.

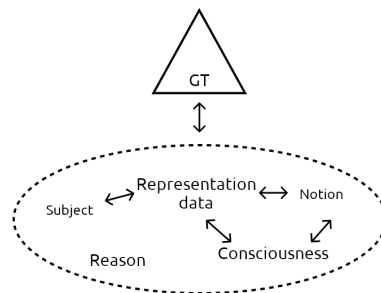


Fig. 10: The process of cognition

To perceive = to correlate representative data with the subject.

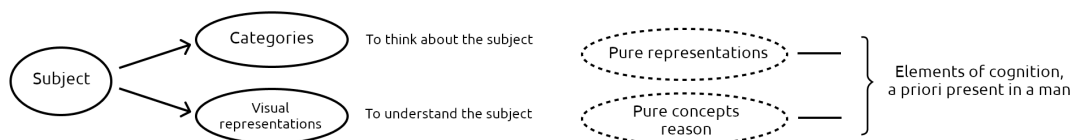


Fig. 11 (left): Relation of representation data to subject. Fig. 12 (right): Concepts capture experience, not the other way around

Processes:

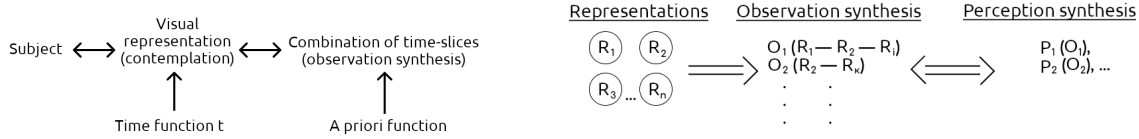


Fig. 13 (left): Synthesis of observation in visual representation. Fig. 14 (right): Synthesis of reproduction of representation

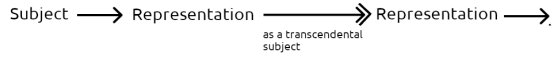


Fig. 15: Synthesis of recognition in the concept



Fig. 16 (left): The connection of the transcendental subject with nature. Fig. 17 (right): Category as cognition a priori

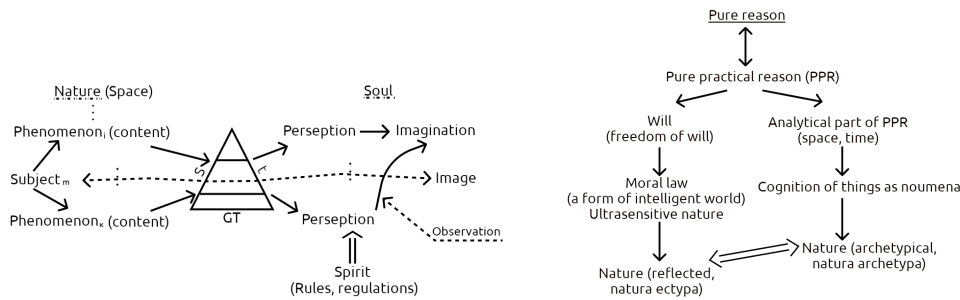


Fig. 18 (left): Human's interpretation of nature. Fig. 19 (right): Kant's idea of "pure reason"

General ability of the soul	Cognitive ability of the soul	A priori principles	Application to:
Cognitive ability	Reason	Conformity to law	Nature
Feeling of satisfaction and dissatisfaction	Judgment	Feasibility	Art
Ability to wish	Mind	Final goal	Freedom

Table 1: Abilities of the soul according to Kant

### 3.4 Model of G. Hegel

The difference between Mind and Reason [4]:

- Reason deals with finite and conditioned.
- Mind deals with infinite and unconditioned.

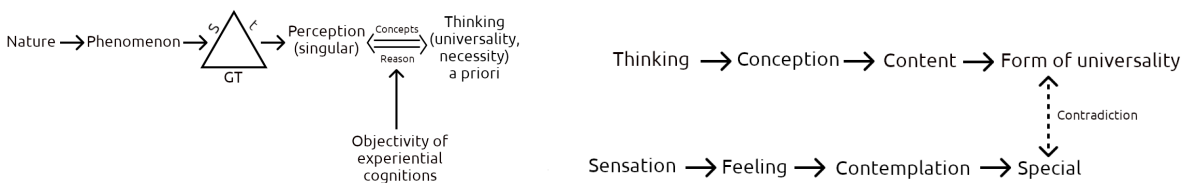


Fig. 20 (left): Concept of mind. Fig. 21 (right): Concept of reason.

Logic breaks down into 3 parts: (1) Doctrine of existence, (2) Doctrine of essence, (3) Doctrine of concept and idea. Nature is an idea in form of otherness. Cognition is carried out through 3 instances: universal, special, singular. Universality – eternal unity of the idea. Singular – the extreme opposite of universality, a form of finite spirit. Special – nature, spirit alienated from oneself. The above concepts of man, his essence and thinking, as a way of knowing objective and subjective reality, are presented for further computer modeling with the aim of creating a computer platform for self-research and for creating digital twins. Let us consider the ideas of a number of philosophers who represent man as a social entity.

### 3.5 Model of E. Fromm

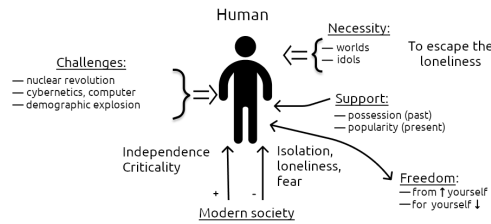


Fig. 22: Model of a human as a social animal

Escape from freedom [10]:

- obedience to the leader (Hitler, Stalin);
- search for new, secondary ties (renunciation of freedom to gain power from a leader).

As a result destructiveness!:

- isolation of a person;
- suppression of individual expressiveness;
- transformation of a man into machine;
- formation of insignificance and powerlessness of a person.

The truth: is the most powerful weapon for those who has no power.

Ways to paralyse critical thinking: (1) Information overload. “Experts” assist in this. Results: cynicism and naivety, (2) Destruction of a structured view of the world. Ours is only what connects us due to creative activity.

Specification of the model for a specific human forms social character of a human (ideology + culture). Continuous activity – intense desire for it is the result of loneliness and anxiety. Education – preparing a person for a role in society. Family – psychological agent of society. Pursuit of justice and truth is a part of human nature. Lower middle class is the main driving force.

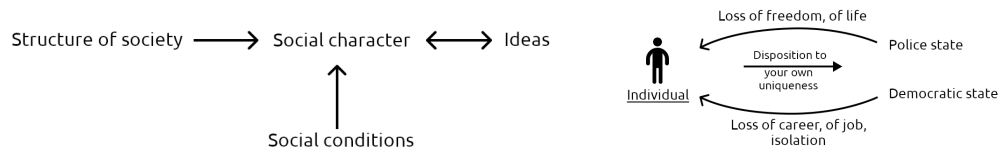


Fig. 23 (left): Social character. Fig. 24 (right): The individual in modern society.

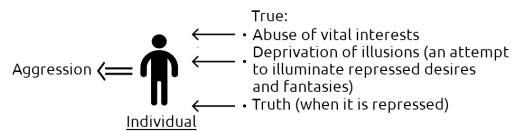
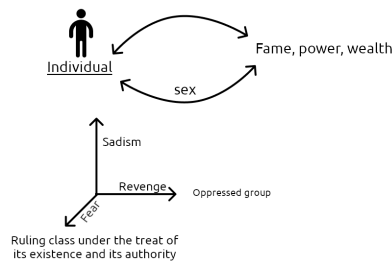


Fig. 25 (left): Individual’s challenges. Fig. 26 (right): Sources of aggression.

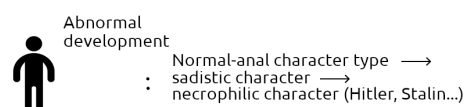
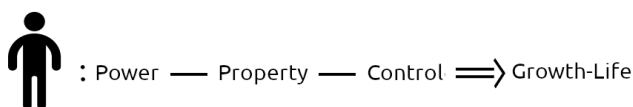


Fig. 27 (left): Desire for destructiveness. Fig. 28 (right): Sources of abnormal behaviour.

This is was in the past. Today: new type of a person exists – a market person. This person is of one thought, of one dimension. Feelings are not replaced, but wither away. Mother of this person is no longer Nature, but a second nature: digital world.

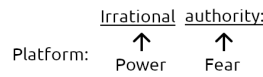


Fig. 29: Irrational authority

Equality = interchangeability != individuality. In-difference = equality != difference.



Fig. 30 (left): The purpose of modern education. Fig. 31 (right): Social pressure on personality.

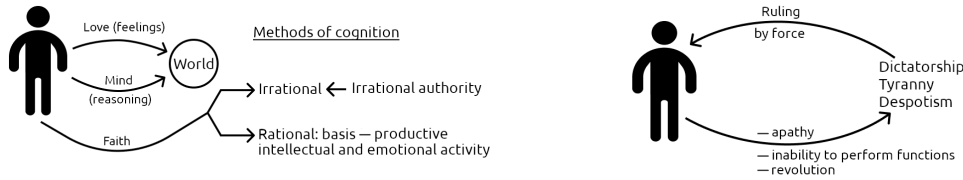


Fig. 32 (left): Methods of cognition. Fig. 33 (right): Negative challenges

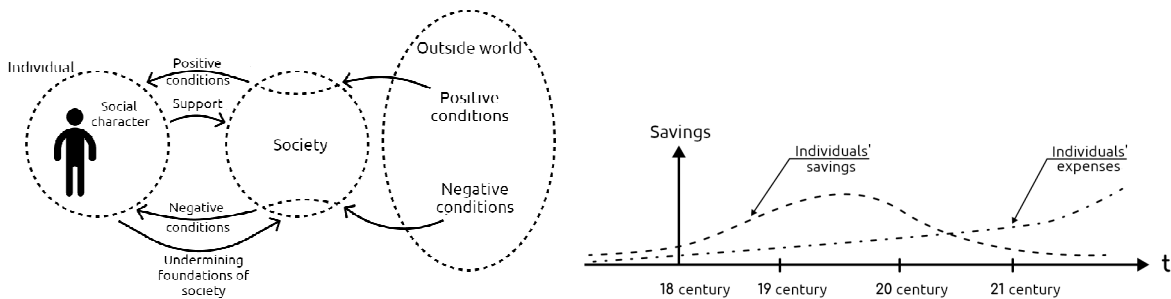


Fig. 34 (left): Formation of an individual's social character. Fig. 35 (right): Transformation of an individual's income and expenses

The prevailing part of inner experience is not realized and for this reason is not controlled by logic, reason, and will. The basis of the unconscious is human irrationality. A person is not free, he is driven by the Id and Super-Ego. K. Marks, B. Spinoza: Human activity is a creative, spontaneous act, possible only in conditions of freedom. Awareness of a reality not realized by human is a condition for social change.

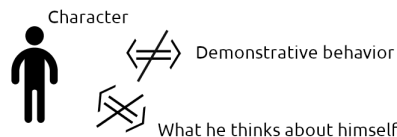


Fig. 36: Estimation of reality.

Social trend: from Patriarchy to Matriarchy.

- (1) Elimination of authoritarian systems: dictatorship, wars, conflicts, terrorist attacks...
- (2) The defeat of authoritarianism,
- (3) Women's revolution,
- (4) Children's and teenage revolution,
- (5) The myth of consumer's paradise,
- (6) Matriarchal traditions are increasing: radicalization of youth, group sex, clothing, etc.,
- (7) Reconsidering the central role of the Oedipus complex.

Matriarchy: unconditional love, natural equality, ...

Patriarchy: conditional love, hierarchical structures, abstract thinking, laws, states and justice.

Fromm's model shows the individual's attitude towards society and to such form of society as the State. Here the essence of a person is manifested as his social character. In this light we would like to cite the recommendations of K. Marks [3] for the formation of the social character of modern man:

- (1) Explain to modern man that he is suffering, bring this fact to his consciousness. This is especially important to do in rogue countries, where modern slavery is returning at a rapid pace.

- (2) Explain the reasons for this suffering: envy, greed, the pursuit of profit, lack of real freedom (slavery), lack of real property.
- (3) Show a person that he can stop his suffering if he eliminates the causes of this suffering.
- (4) Develop a program for liberating people from poverty outlining the principles of a new life.

We limited ourselves here to a brief presentation of Fromm’s ideas and did not touch upon the ideas of other philosophers who were engaged in research on the social side of man due to the limited format of this article.

### 3.6 Model of K.G. Jung

This is the last model that we will present in this paper due to limitations in the amount of material to be published and the format not entirely suitable for presenting such extensive research. But, K.G. Jung's [6] idea of the “collective unconscious” plays a central role in this study, since it actually determines the architectural solution (the main idea) of a digital person specified on the DS. The importance of Jung's ideas also lies in the fact that his hypothesis about the intellectual essence of man is quite close to architectural solutions in computer science when developing large, distributed, heterogeneous systems, including the use of artificial intelligence technologies of various purposes and scales. The importance of Jung's ideas also lies in the fact that it shows the existence of some common part inherent in humanity, which greatly simplifies the development of the projection of each individual onto the DS.

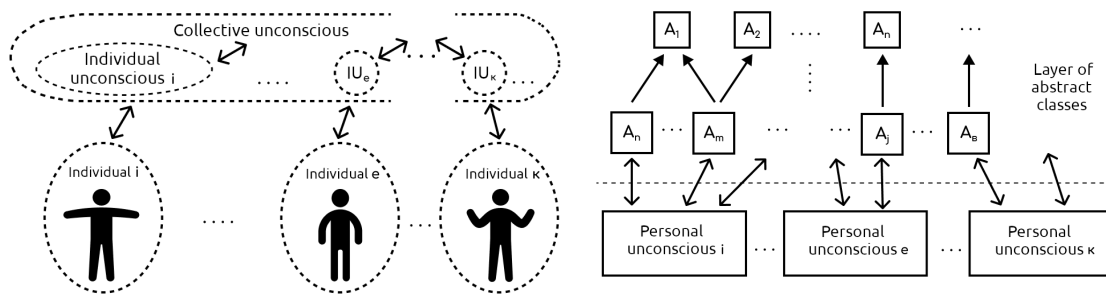


Fig. 37 (left): Interpretation of CU. Fig. 38 (right): CU interpretation by object oriented approach (programming methodology)

Note:

- 1) The layer of abstract classes is the CU, they only are inherited, but not filled.
- 2) Personal unconscious – a system of fillable classes that can be available to an individual, but under certain conditions (a) Interpretation in object-oriented approach notation).
- b) Conceptual (philosophy) interpretation of a person (intelligent being).

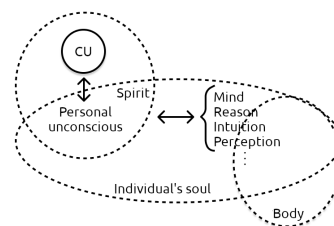


Fig. 39: OOA interpretation and philosophy interpretation of Jung's idea of the collective and personal unconscious.

Classes  $A_i$  – are archetypes, universal images that have existed since time immemorial. They manifest themselves through secret teachings, myths and fairy tales.

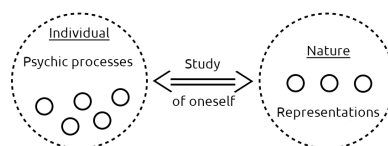


Fig. 40: Individual and the Nature interaction

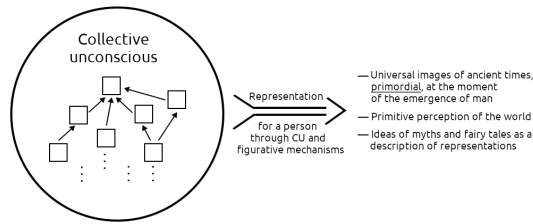


Fig. 41: CU representation for a person

The original experience is lost, as if we have “lost” the developers of the OS and development environments (tools). We are just users!

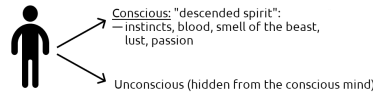


Fig. 42: Two kind of meaning

Anima is a special archetype of many of them. For a man it is a “projection” of a woman. “Not-me”.

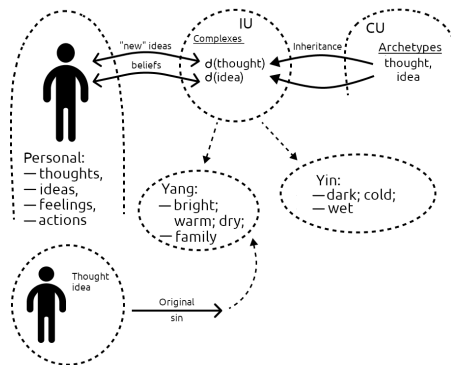


Fig. 43: Anima conception presentation

The projection can be realized only after its appearance.

Love can not be comprehended by consciousness.

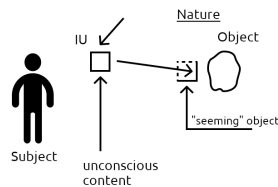


Fig. 44: “Idea” as “Archetype”

“Idea” – is a synonym of “Archetype”.

There is no difference between humans and other animals.



Fig. 45 (left): God and Individual. Fig. 46 (right): Transformation of modern consciousness

In creativity, primary images become visible (Plato).



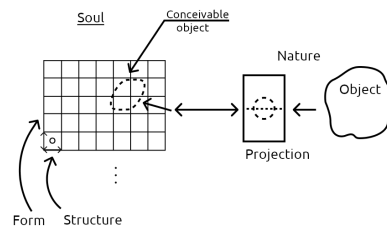


Fig. 47: “Mechanics” of nature and human interaction

Jung believes that everything in this world is based on pairs categories: matter – spirit, etc.

Let us draw brief conclusions based on the reviewed material. The presented material is the basis for the formation of such concepts as “digital profiles” and “digital footprint”. We have given models of various philosophers, but have not formed a universal, generalized model. We believe that such a model will be created only as a result of approbation of a system of models in a global computer network. Such work can begin with the attraction of additional funds from sponsors or other interested parties. We hope that this excursion into the world of philosophical knowledge will make it possible to more clearly present the purpose and importance of such abstractions as “digital profile” and “digital trace”.

#### 4 INDIVIDUAL PROFILE

Before we begin to consider this issue, we should make an important remark that we consider all the abstractions under regard as given in some digital space, i.e. in a generally accepted spatio-temporal context.

Note. By digital space we mean any known algebraic metric space on which transformations are given that have a digital interpretation. Those. all functions are computable on a computer.

Let us make a number of comments. The profile (Pfl) essentially has two representations. Static or physical, dynamic or digital. Static Pfl is closely related to the biological and social essences of man. Dynamic Pfl – with the digital activity of the individual. Therefore, as a result, the individual Pfl has three representations: biological, social and digital (as an interpretation of the previous two). An individual trace has two representations: biological (Physical) and digital. One more important note. We are talking about conscious things that are generally accepted and understandable to everyone. But there is still an element of the unconscious, which in many cases remains outside our consciousness. The unconscious cannot be revealed by the individual (in most cases) directly, only indirectly. One of the goals of our approach is to help the individual identify important elements of his individual unconscious (IU).

IU can be detected in various ways. The direct method is a method based on S. Freud's method. The indirect method is based on the analysis of individual profile (IPfl) and individual trace (IT), as a manifestation of the unconscious in the activity of the individual. This technique may created both through computer modeling (traditional) and using AI methods to identify “inexplicable” actions and decision-making by an individual. To speed up the convergence of Ipfl to the true one, the following option (initial) is proposed. Types of people can be specified (according to Freud and Fromm), and then, by accumulating data and forming IPfl and IT as a representation of the selected type of the unconscious. Based on the principle of maximum coincidence, the type of the unconscious is determined as the most probable.

Let us consider Ipfl as a representation of an individual in his three essences.

##### 4.1 Physical Pfl

These are physical and medical data that form a non-repeating physical “portrait” of an individual. First of all, these are such familiar parameters as height, weight, skin color, hair, dental formula, physique, blood type, blood formula, etc. This should also include mental characteristics of the individual: character type, temperament, etc.

##### 4.2 Social Pfl

This is a characteristic of an individual from a social point of view. A role in a team, social activity, social and ideological position, religion, attitude towards religion, culture and art, as well as many other parameters.

### 4.3 Digital Pfl

It can be presented as the appearance of an individual, given in digital space (the previous two points). It is characterized by a significant number of parameters and individual topology in the digital space. It also includes parameters such as personal preferences of the digital world, first of all: preferred hardware (desktop PC, laptop, tablet, smartphone, etc.). The type of operating system used, set of applications, social networks and Internet sites visited, etc. Also a very important parameter is the circle of communication in the global digital space with other individuals, organizations, information resources, etc.

Note. We do not have the task of giving a full and complete detail of all the parameters that make up the IPfl. Moreover, the composition of the parameters will be determined by the user himself. Thus, we have just laid out an idea here.

### 4.4 Individual unconscious

For our study, as we have noted earlier, two approaches are applicable: direct and indirect. In the case of a direct approach, we only have to record the IU in the corresponding class. Then the verification stage is possible, because there is the possibility of various types of errors to be made by a specialist (expert) (psychologist and/or psychiatrist). It is quite possible to develop an intelligent subsystem that can solve this problem. The second option (indirect) is more objective, but requires an appropriate methodology, implemented in the form of an application, as well as objective source data, which is extremely difficult in our time of complete distrust towards computer networks.

## 5 INDIVIDUAL TRACE

The concept of “trace” may be represented by two abstractions: geographic footprint and digital footprint.

### 5.1 Geographic footprint

Geographical trace – is the movement of an individual in physical 3D space and in time. In other words, this is a recorded change in one’s own coordinates over a certain period of time , at different scales:

- local. This, as a rule, is: home --- work --- places of rest (entertainment) --- home, etc. It happens within the metropolis (village, city). It has a cyclic period of a working week.
- regional. Sustainable business trips (travel), interests, hobbies, summer cottage, etc.
- global. Typically covers international travel for business, cultural or leisure purposes.

Sources of information that can be used to obtain trace parameters are given by us in our other works.

### 5.2 Digital footprint

A digital footprint (DF) is essentially the topology of an individual’s activity in a global computer network. DF can also be divided into a number of levels:

- local – this is the level of the enterprise (LAN), or a city.
- regional – city, region, country.
- global – this is the World Wide Web, the entire Internet.

The division is very arbitrary, because the Internet does not have the boundaries that we are familiar with from geography. However, states establish different requirements for internal Internet nodes and often block “undesirable” Internet resources, limiting an individual’s capabilities. Digital space is a kind of coordinate system that can associated with the time scale. By recording nodes (resources) and DS subscribers with a certain discreteness, we get three variants for the trace, which we stated above.

A short conclusion can be drawn. At this stage, we have completed a brief review of the individual for his representation in DS. It is quite obvious, and we have emphasized earlier, that an individual cannot exist in isolation. He needs a social environment in which he can exist properly as a person. But the social environment is not some immense sea of people, individuals.

In the social environment there is also a strong stratification of people according to various characteristics and reasons. A whole system of so-called social (public) groups (SG) is emerging. Let us consider the concept of social group (SG) in more detail.

## 6 SOCIAL GROUP

By SG we understand two or more individuals connected by at least one common idea, which implies their periodic interaction. Typical examples of SG are: family, any community that is united by a business, a hobby, a common interest or something else. Numerically, SGs are very different from each other. Groups such as a laboratory, unit, department, enterprise and, finally, a political party are formed from the SG. At the same time, the SG is necessarily the interaction of individuals who are members of the SG. Interaction can be direct, or it can be indirect, through another member. SG can be presented by analogy in the same way as an individual, but the fundamental difference is that the SG is a certain system, and not just a certain number of people. Let us consider the main types of SG representations.

### 6.1 SG profile

Without doubt, SG has the same representation as IPfl. But this is not just a set, or a certain set of IPfl of individuals included in the SG. But, just like IPfl, SG-Pfl also has a number of representations similar to IPfl:

#### 6.1.1 Physical representation

This is a collection of individuals that form the SG. In addition to the totality of individuals, the following characteristics (parameters) are important:

- physical location of the members of the group in physical space (city, streets, apartments, houses, etc.);
- availability and location of technical resources: printing houses, servers, other equipment, such as various types of transport, research equipment, etc.

#### 6.1.2 Social representation

First of all, it is an idea, a party, or something else that unites individuals and is their social distinctive feature. As a rule, social representation is the basis on which SG is based. This might be religious or party idea, program and practical activity. This is what shapes the will of a large number of people, what focuses people's efforts on one idea, one goal.

#### 6.1.3 Digital representation

It represents the digital topology of the SG in digital space, has a systemic property that cannot be reduced to a set of local digital topologies of the SG members. The emergence of a systemic effect leads to the fact that the SG is perceived as some integral physical, social and digital entity, which is identified in this way by other participants (representatives) of the digital world. Each representation can be depicted graphically for more clarity. At the same time, the presentation of topology not only has a visual meaning, but also has a certain significance for understanding many things.

The diagram of social representation of SG is a maximum one in terms of scale. But the principle shown is inherent in any SG and may not always be realized and presented as a certain pattern of activity. It is also obvious that not every SG requires such a level of abstraction. The SG DS as a fragment of the global DS with different scales:

- strategic (global) level management bodies;
- regional level authorities;
- tactical level controls;
- SG members, attracted individuals.

The subdivision of elements of the presentation above do not have geographical significance or scale (global, regional, local), although they may coincide with them. This division (hierarchy) is determined primarily by the level of tasks being solved. It was noted earlier that the entire set of tasks is formed in the "program" - the main document of the party, for example, and is specified in plans and decisions. To solve the formulated tasks, all members of the SG are trained, decisions are prepared and made, planning, management and analysis of the results obtained. We examined the management cycle in our previous works. It should be noted that digital representation is a form of existence of SG in our time, the basis of which is data, information, knowledge and understanding. And in principle, SG can exist without a DS, as it happened

earlier in the recent history of mankind (oral speech, writing, telephone, telegraph, newspapers). However, you will have to get used to it and the operating efficiency and value of the SG will be sharply reduced, and some functions will disappear altogether.

## 6.2 Trace of SG

The trace of SG is the most complex abstraction, but at the same time it is the most significant and it essentially determines the effectiveness of the SG. That is, the SG is created for a reason, not for the sake of its existence. It is created to achieve certain goals and at the same time solves a number of supporting tasks. Assessment of the effectiveness of achieving the goal can be determined only by analysis of the actions of the SG, which may be defined as "trace". Depending on the scale of the SG itself, the footprint can also have different scales: local, regional, and global. But first, let us define what an SG trace is. With an individual trace, everything is more or less clear, since the individual is localized as a physical, social and digital entity. But what SG is – needs to be defined. We showed the profile of SG from various points of view earlier. Taking into account the fact that the SG has emergent properties that no individual (member of the SG) individually possesses, we will also try to formulate the SG-Tr in three entities: physical, social and digital.

### 6.2.1 Physical essence of SG-Tr

This is a set of individuals. In other words, it has certain physical properties, such as:

- number of members;
- their physical characteristics (children, schoolchildren, students, workers and mixed groups);
- geographical location (one house, farm, village, district, city, region, region, country, international level), one company, group, cartel, etc.

### 6.2.2 Social essence of SG-Tr

The social essence of the SG trace is a trace primarily in the minds and consciousness of SG members and other people within an enterprise, metropolis, state or at global scale. It does not necessarily need to be an ideology. Such a social trace could be a conviction in the quality of products, services, lifestyle and much more. A special situation is when the SG is trying to expand its ideological influence, affects the minds and souls of people. Extreme cases of such influence are religion and politics. The question arises: how to identify the social trace of SG? The idea of conducting various kinds of surveys and questionnaires immediately comes to mind. But this is an extremely ineffective method, which may be suitable only for political and religious organizations. An analysis of traffic to SG resources (information) on a certain topic may be more objective.

But this is also only an indirect indicator. Ordering a special sociological study is very expensive, time consuming and also a big mistake from the point of view of the objectivity of the results. It seems to us that the most effective way to present the "social trace" is the following:

- assessment of the quantity and dynamics (first signed derivative) of sales of goods (services), presentation of products and ideas.
- assessment of the stratification of society using SG services (children, adolescents, adults, workers in various fields of activity).
- assessment of geographic dynamics at various scales (local, regional and global) of service users.

Note. In this context, we understand services as goods, publications, intellectual activity, ideas, concepts, etc. Services can be refundable, non-refundable and mixed. It all depends on both the type of SG and the type of service.

- assessment of the number of visits to SG Internet resources (web pages, social networks).
- links to SG publications, citations of SG members by other authors and organizations.
- placement of links about SG on the resources of other SGs.

Note. Obviously, in this day and age, social trace is highly correlated with digital footprint.

### 6.2.3 Digital footprint of SG

This is actually the projection of the SG onto the DS. Despite the limitlessness of the Internet, the projection of a digital footprint should also be considered at various scales. Those are local, regional and global levels. Note that the previously shown digital profile of SG shows a static picture, while Df of SG is dynamic over time. This dynamism is characterized by the following properties:

- first of all, the topology and its transformations into the DS. A change in the number of nodes at various levels indicates an increase in the influence of SGs (increase in number, change in scale) in the society or a decrease in the degree of influence (decrease in number, degradation of scale). A change in the number of connections also indicates the structural strengthening or degradation of SGs.
- primary access types: Wi-Fi, Cell, Wire, Satellite, etc.
- stratification of subscribers: news feeds, social networks, trading platforms, companies, private clients.
- stratification of types of connections: business, education system, training, ideology, interest, etc.

## 7 CONCLUSION

In this paper, we have briefly, almost abstractly, examined the idea of digital human and the digital reflection of an individual in digital space. To understand such fundamental concepts as space, time, man as a biological and social entity, we turned to the philosophical heritage. Therefore, in the article we presented in a schematic form the views of outstanding philosophers on the questions of what are man, nature, human thinking, its capabilities and limitations.

A large number of people are already present on the Internet, although they are not fully aware of this fact. There are obvious advantages and serious threats. The main idea of our research is aimed at making each person aware of his projection in the digital space in order to studying himself. Also, each individual must understand that any information about himself can have both positive and negative consequences. We also tried to show the deep mechanisms that constitute the essential basis of the individual based on the ideas of leading thinkers over a long historical period. In the future, we intend to develop our research into the creation and trial operation of an intelligent social network in order to study the ideas and hypotheses formed in this article.

In this article, we did not present universal or integrated models of man, nature, thinking processes and perception of objective reality. The task of our next stage of research is the computer interpretation of the ideas presented in this article using modern programming technologies and artificial intelligence.

## 8 REFERENCES

1. Systems Monitoring the Improvised Explosive Devices: theory, principles, methods. RUE2 – 1649 – ST – 06. 2007.
2. SPINOZA B. The Ethics, 1674.
3. MARX K. Capital. Volume I: A Critique of Political Economy The Process of Production of Capital (Das Kapital), 1867.
4. HEGEL G. Encyclopedia of Philosophical Sciences, 3rd rev. edn. 1827.
5. NIETZSCHE F. The Will to Power. 1960.
6. JUNG K.G. Psychology of the Unconscious. 1912.
7. DESCARTES R. Principles of Philosophy. 1644.
8. KANT I. Religion within the Bounds of Bare Reason. 1792.
9. FREUD Z. New Introductory Lectures on Psycho-Analysis. 1933.
10. FROMM E. Escape from Freedom (US), The Fear of Freedom (UK) (1941) ISBN 978-0-8050-3149-2
11. Palantir <https://www.palantir.com>