NATURAL AND ARTIFICIAL INTELLIGENCE IN CONSCIOUSNESS SOCIETY

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Abstract

Consciousness Society is characterized by equality of structured Natural Intelligence (NIstructured) and Artificial (AI) ROBO-Intelligence. The purpose of research constitutes adaptable algorithmic process of robotic implementation of Artificial, Robotic Intelligences (AI) elements; there are used Adaptable Tools as Technological information methodology basis. There are analyzed creative, emotional, temperamental, and sensual sets of **items** which are to be implemented in ROBO-intelligences**.** They represent one **axe** of robotic tables constituting first level of ROBO-intelligences elements. Another dimension of these tables represents items' evolution functions. Functions are located on other **axe** of robotic matrices. This second axe represents intellectual, emotional, sensual, and spiritual evolution **steps.** Using adaptable tools of algorithmic definitions of robotic elements are defined superior, next level elements of ROBO - intelligences. Presented adaptable information technology for ROBO-intelligence's creation process is used in the institutional project "Creating Consciousness Society" that is developed in the period 2008 - 2018 by the team of AESM and supporters.

Keywords: consciousness, natural, artificial, intelligence, robot, creativity, adaptability, society

1. Introduction

Taking "A machine can act intelligently" as a working hypothesis, many researchers have attempted to build such a machine. **The purpose of the research** is to find out the common moral principles for Artificial and Natural Intelligence that would serve a basis for successful interacting of robots with humans in future Consciousness Society.

Creative ROBO-intelligences will possess features which characterize highly creative people (natural intelligence). Character's creativity and emotion intelligences which are to be implemented in Character ROBO-intelligences and Emotional ROBO-intelligences are analysed and developed.

(1) **The last time in European Community.** Publications [1-3] confirm the **European Community** international interest [4] for AESM research results in the Branch of Conscience Society Creation process and in its engine for the process of creation ROBO-intelligences, represented by the Adaptable Tools.

(2) **Robots in Homo - Robotic Conscience Society. C**ommittee on the problems of the European Parliament endorsed the draft recommendations, as well as the administrative regulations on the civil-engineering production of robots. For that document voted PRO: 17 deputies, Against: 2 deputies, and Obtained: 2 deputies.

(3) **Robot's Econometrics.** According to data of the European Parliament, in the period 2010-2014 the average sales of robots was 17% annual and in 2015 has risen to 29 percent. Growth of robots developed the volume of patents in relation to robots - in the last 10 years the volume has doubled. Artificial intelligence will determine economic efficiency in such spheres as manufacturing, commerce, transport, medical service, education, case-law and agriculture.

(4) Robot - legal status. It is not yet determined the **legal status of robots,** which soon will overwhelm us. Scientists are, as some carriers of artificial intelligence, provided with self-education capacity, separately, will need to be identified as "**electronic faces**" with corresponding Passport.

The document will contain the framework conditions for producers and users of robots, formulated since the great writer Isaac Azimov: 3 principles - the basic conditions in humans. collaboration with robots.

(5) Isaac Azimov: 3 principles. Asimov's Three Laws of Robotics, as they are called, have survived to the present:

1. Robots must never harm human beings or, through inaction, allow a human being to come to harm.

2.Robots must follow instructions from humans without violating rule 1.

3.Robots must protect themselves without violating the other rules.

2. Creative Approaches & equation IQ = NIstructured

Creative ROBO-intelligences (Creative IQ) will possess features which characterize highly creative people, Natural Intelligence (NIstructured) .

Currently popular creative approaches include

- Statistical methods,
- Computational intelligence and
- Adaptable symbolic IQ.

There are an enormous number of tools used in AI, including versions of:

- search and
- mathematical optimization,
- adaptable systems,
- logic,
- methods based on probability,
- economics,
- and many others.

3. Problem's Solution Steps

It is known: To solve the problem, computer specialist classically must:

1) formulates the problem,
2) formalizes the problem,
3) creates the algorithm of its solution,
4) codes the algorithm with the help of one of the programming languages,
5) debugs the program,
6) gathers documentation and
7) uses and maintain the obtained program – product

2.1. Our goal is to use Adaptable Tools [5,11] to develop first 3 steps of the ROBO-intelligences creation.

2.2. **Intelligence evolution**: Piirto's 7i features which characterize highly creative people in ascending adaptable process of Piirto's Six Steps to the Creativity top develops next (2^{nd}) level of IQ elements.

2.3. Creative ROBO-intelligences [6]

Creative ROBO-intelligences in Conscience Society (Creative IQ) will possess the first level intelligent features (Piirto's 7i):

1. inspiration,
2. imagery (imaginerie),
3. imagination,
4. intuition,
5. insights (înseninare, озарение),
6. improvisation, and
7. incubation

which characterize highly creative people

Creative IQ will be touched by the hierarchical process of (1st level) 6 steps to the Creativity top:

1. acquiring knowledge,
2. developing curiosity,
3. becoming interested,
4. passion,
5. dedication, and
6. professionalism

4. ROBO-Intelligence based on Adaptable Processing

Adaptabily Tools [5] represent our solution for Robotic problem. The adapter, as a meta-system tool, supports adaptable software and hardware flexibility: extension and reduction of ROBO-intelligences possibilities. By the help of adapter, it can be presented **pragmatics, syntax, semantics, environ-ment,** and **examples** of new or modified **(next, 2^{nd}, level)** elements of ROBO-intelligences.

4.1. The 2^{nd} Level IQ's elements: Adapter's general scheme:

_BL_ < Pragmatics of ROBO-intelligence element >
_SY_ < Syntax of ROBO-intelligence element>
(1) _SE _ < Semantics of ROBO-intelligence element>
_CO_ < Context of ROBO-intelligence element>
_EX_ < Examples of ROBO-intelligence element >
_EL_ and example (2) of it's implementation

4.2. The 2nd Level IQ's elements: Example: Using adapter it is defined one of the new (2nd level) ROBO's element "Inspired passion":
_BL_ < Inspired passion's pragmatics>
_SY_ < Inspired passion's syntax>
_SE _ < Inspired passion's semantics>
_CO_ < Inspired passion's usage context>
_EX_ < Inspired passion's examples call>
_EL

Table 1. The 2nd Level IQ's elements

Creativity top Versus Creative feature	Acquire Knowledge	Develop Curiosity	Become Interested	Passion	Dedication	Professional-ism
Inspiration	Inspiration in acquiring Knowledge			Inspired passion		
Imagery		Imagery developing Curiosity				
Imagination			Imagina-tion becoming interested			
Intuition				Intuition's passion		
Insights					Insights dedication	
Improvi-sation						Improvisation in professionalism
Incubation		Incubation developing Curiosity				

4.3. The 2nd Level IQ's elements: Commentaries:

(**1**) **Pragmatics:** name "Inspired passion";

(**2**) **Syntax:** "Inspiration in passion";

(**3**) **Semantics:** Correlation of functionalities of the 1st level of IQ elements: "Inspiration" and "Passion";

(4) Usage context: Evaluation from "Inspired passion" situation "Inspiratio become interested" to the next (top) situation "Inspired professionalism";

(5) Examples of "Inspired passion" (See: Next Table): "ROBO-intelligence became passionate by it business, it begin think to social profit."

4.4. The 2nd Level IQ's elements (*Table 1*): Theorem "Creative ROBO-intelligence"

If there are done: the 1st level of Creative ROBO-intelligence's Piirto's 7i features which characterize highly creative people, - the 1st level of Creative ROBO-intelligence's Piirto's six steps of the creativity top, and Adaptable tools it is possible to create all 2nd level elements of Creative ROBO-intelligence based on these IQ's 1st level elements.

5. Emotional Intelligences

Emotional ROBO-intelligence (EQ) refers to artificial (robotic) intelligence's ability to monitor their own and other intelligence's emotional states and to use this information to act wisely in relationships.

5.1. The 1st level of EQ elements: basic emotions.

Many psychologists believe that there are six main types of emotions, also called basic emotions. They are: 1. Happiness, 2. Sadness, 3. Fear, 4. Anger, 5. Disgust and 6. Surprise

Table 2. Adaptable evaluation steps

Evolution of Emotions	Self-awareness	Managing emotions	Motivation	Empathy	Handling relationships
Happiness	**Happiness self-awareness**				
Fear					**Fear handling relationships**
Surprise		**Surprise managing**			
Disgust			**Disgust motivation**		
Sadness					
Anger				**Anger empathy**	

5.2.Adaptable evaluation steps (*Table 2*): the 2nd level EQ elements

Emotional intelligence's adaptable evaluation steps are represented by:

1) Self-awareness: recognizing internal feelings;

2) Managing emotions: finding ways to handle emotions that are appropriate to the situation;

3) Motivation: using self-control to channel emotions toward a goal;

4) Empathy: understanding the emotional perspective of other people;

5) Handling relationships: using personal information and information about others to handle social relationships and to develop interpersonal skills

6. ROBO-Temperaments

6.1. ROBO-Temperaments 1st level EQ elements

There exist four temperaments that a relatively simple but powerful way of classifying personalities: Melancholic, Phlegmatic, Choleric, and Sanguine

6.2. Theorem "Sanguine ROBO-intelligence"

If there are done:

- the main features, characteristics, and functions of Sanguine type of temperaments (*Figure 1*),
- the Piirto's 7i features which characterize highly creative people, and
- Adaptable Tools

it is possible to create Sanguine ROBO-intelligence with such features of creative artificial intelligence.

6.3. The 2nd level of Character ROBO-intelligences with seven features which characterize highly creative intelligence.

In the *Table 3* there are present some 2nd level elements o IQ which are presented by adaptable algorithms created on the base of temperament characteristics in composition with the seven features which characterize highly creative intelligence.

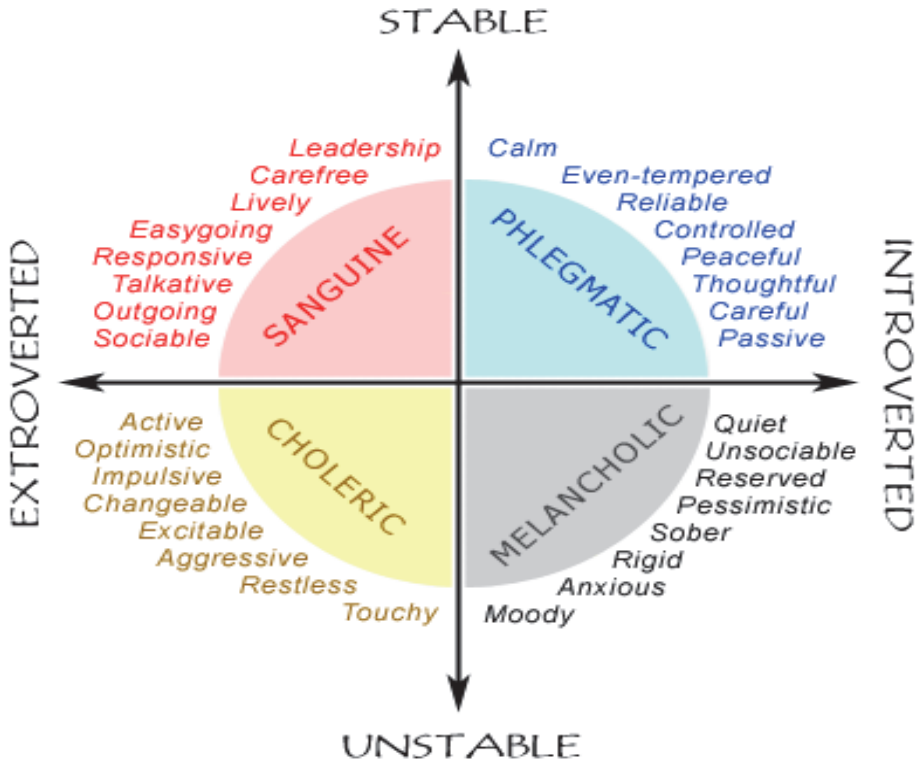

Figure 1. Temperaments

Table 3. Temperament & Creativity

Creative feature Versus Personality	Inspiration	Imagery	Imagi-nation	Intuition	Insights	Impro-visation	Incubation
Choleric	Choleric's Inspiration	Choleric's Imagery			Chole-ric's Insight		
Sanguine				Sanguine's Intuition		Sangui-ne's Inpro-visation	
Phlegmatic	Phlegmatic's Inspiration						**Phlegmatic's Iprovisation**
Melancholic	**Melancho-lic's Inspiration**		**Melancholic's Imagi-nation**				

6.4. The 2nd level of Character ROBO-intelligences evolution with Piirto's Six Steps to the Creativity top

In the *Table 4* there are present some 2nd level elements o IQ which are presented by adaptable algorithms created on the base of temperament characteristics in compo-sition with the Six Steps to the Creativity top.

6.5. Theorem "Choleric ROBO-intelligence"

If there are done

(1) the main features, characteristics, and functions of Choleric type of temperaments,

(2) the first level Six Steps to the Creativity top elements of Character ROBO-intelligence (*Table 4*), and

(3) Adaptable Tools

it is possible to create Choleric ROBO-intelligence.

6.6. Theorem "Emotional Phlegmatic ROBO-intelligence"

If there are done:

(1) the main features, characteristics, and functions of Phlegmatic type of temperaments,

(2) the first level Six Types of emotions elements of Character ROBO-intelligence, and

(3) Adaptable Tools

it is possible to create Emotional Phlegmatic ROBO-intelligence.

6.7. Hierarchy of theorems

Demonstration of Theorem "Choleric ROBO-intelligence" is based on such Lemmas as "Choleric acquires Knowledge", "Choleric develop Curiosity" and so on, which demonstrate the process of adaptable creation of 2nd level elements of Character ROBO-intelligences.

Table 4. Temperament & Creativity evolution

Creativity top versus Peronalities	Acquire Knowledge	Develop Curiosity	Become Interes-ted	Passion	Dedication	Profes-sionalism
Choleric		Choleric develop Curiosity				
Sanguine	Sanguine acquires Knowledge				Sanguine's dedication	
Phlegmatic			Phleg-matic become Interested			
Melancholic				**Melan-cholic passion**		**Melancholic profes-sionalism**

7. Sustainability

To create ROBO-intelligences it is necessary to implement next steps.

The 1st step. To create ROBO-intelligences which possess 1st level elements – intelligences, emotions and temperaments – it is necessary first of all to introduce them in robotic heart and robotic head.

This consists in creation corresponding Computer Based Information Systems for each of: Intelligences (7i), Tops (6s), Emotions (6), Temperaments (4), and Sentiments (positive & negative)

The 2nd step. Next step in creation process of ROBO-intelligences consists in elaboration of their 2nd level elements based on its 1st level elements using Adaptable Tools for its definitions.

The 3rd step. Each definition of ROBO-intelligences 2nd level elements is composed from definition of such it's characteristics as: pragmatics, syntax, semantics, environment, and examples. These definitions represent the Adaptable Algorithmic Knowledge Robotic Base which help to create real ROBO-intelligence using Adaptable Tools for its development, verification, and experiment-tation.

The **4th step. Measure** of ROBO-intelligence energies for each creativity, emotions, temperaments, sentiments.

These measures represent the Energetic Knowledge Robotic Base which help to create real ROBO-intelligence using Adaptable Tools for its development, verification, and experimentation.

Consciousness Society Creation Theorem: Having the Enegetic Knowledge ROBO-intelligence Warehouse it is possible algorithmically to implement in ROBO-intelligences the creative, emotion, temperament and sensual human characteristics!

ROBO-intelligences will possess features which characterize highly creative people (natural intelligence). Character's creativity and emotion intelligences which are to be implemented in Character ROBO-intelligences and Emotional ROBO-intelligences are analysed and developed.

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