DEVELOPED PERSONALIZED CYBER CLONE SYSTEM BY AMALGAMATION OF HUMAN BRAIN INTELLIGENCE

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Abstract:

To provide a counterpart for every individual in the form of digital Personalized Cyber Clone (PCC) by amalgamation of the study of individual's brain intelligence (IBI) and human information processing system which will help to live a better life in the Erratic World of today. This PCC will save time, energy and most importantly will act as a personnel guide for each individual. It will escort the individual with rational decisions in every field whether professional or pertaining to personal life.

Keywords:

Personalized Cyber Clone, Individual's Brain Intelligence, Human Information Processing System, Rational Decisions.

1. Introduction

These days, people are living a very fast life and are often puzzled by the latest devices like Laptops, I-phones, PDA's, Internet and automated machines, etc., they usually ponder what to do and what not, which lead to the development of a new world called Erratic World which is made up of two Worlds i.e. Real (Physical) world and another is Digital World in both the worlds every individual is puzzled about how to lead a better life and the combination of both gave birth to a confusing, fast & violent Erratic World.

This Personalized Cyber Clone (PCC) [3] will guide each individual to live his own life in a better way. The need of PCC has been felt because Erratic World is an unexpected world full of confusions so people are unaware of what to adopt and what not. Here PCC helps in decision making and guiding every individual not only in the cyber world but also in the real world. As all of us know that it is only the best which survives in the most adverse of the situations. The conditions of today make us feel that we are a confused lot and this state of confusion must not be taken lightly. When we take care of this state of confusion then only we will be able to survive in this erratic world.

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To know one self better the Erratic World is now giving us the opportunity to create a Personalized Cyber Clone which can guide us in adopting things which are suitable for us in this digitally explosive atmosphere and help us to live a tension free life in this erratic world.
Our Cyber Clone research places stress on individual personalized information processing characteristics, models, and extensive applications. Brain intelligence is an upcoming field that systematically helps us in studying the human brain and its information processing mechanism. It also provides the principles of individual modeling, guiding PCC's core design and intelligence upgrade. PCC specifically studies individual information processing, their differences and then evaluates the optimum outcome so achieved.

Personalized Cyber Clone (PCC) can be evolved only from the integration of many studies, fields and it has a vast range of applications so it is multidisciplinary in nature. The major challenge in building a Personalized Cyber Clone is to integrate all these studies & their experts. Isn't it quite difficult and complicated? We will definitely need to set the standards for building the PCC & its protocols also should be properly designed as these will play an important role in the development of PCC. In which most important role will be played by the different version of protocol having a unique biological database. This will only be similar to something like a reproduction of the individual himself or a soft copy of the individual installed in his PC.

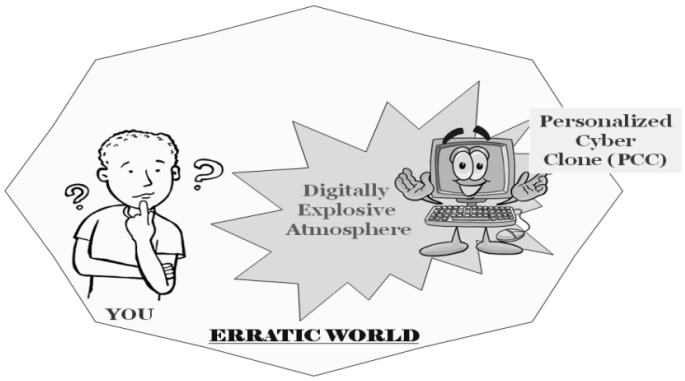

Figure1: PCC in digitally explosive atmosphere confiscate our in decision in Erratic world

We have always felt the need of a language to communicate with each other since the very moment when man came into existence. The need gave birth to languages not one but many this further gave birth to the need of learning each language but it is not possible for a person to know all this so it resulted in the beginning of someone or something which can help us in the communication. Similarly now a days for a common person the need of a program is felt which can free him from all this confusion and make his life simple. We have imagined and used a lot many things which can solve our problems physically and mechanically. But today every human being is more confused than ever before so a personalized cyber clone can be the best answer.

1.1 Purpose and motivation towards PCC

The purpose of PCC is to form an integrated open platform to join all the multidisciplinary and interdisciplinary actions as well as a variety of technologies to be adopted for globally combined work on understanding more about human beings brain, assimilating all this with computer and create something which is able to handle the cyber world and its invasive devices in the rising hyper world [4].

PCC means Personalized Cyber Clone and in this Personalized means real-I's attitudes, behaviors, ego etc. Now-a-days the researches are researching in making a robot or a program which can do things efficiently as that of a real-I can do, so for this they use Artificial Intelligence, Robotics, genetic engineering etc. but here we are talking about to make digital copy of a human brain. The ultimate goal of PCC is to make a counterpart of the individual which acts as a clone [1] in the digital world.

PCC means an exact virtual image of you [2] in cyberspace which has the same personality as that of yours and will help you live better in hyper erratic world. It's well known that people say and do many things in cyberspace that they wouldn't ordinarily say or do in the face-to-face world. They loosen up, feel more relaxed and express themselves more openly when alone. [7].
The uninhibited and relaxed response of a person in the cyber space is not the only factor that determines how much people open up or act out in cyberspace. The behavior of the person also varies to a great extent in the presence of other persons or a particular one. The tendencies of every individual differ greatly towards the expression. Individuals with Melodramatic styles tend to be very open and emotional. Enthusiastic people are more restrained. The online uninhibited and relaxed response of a person will clash with these personality variables, in some cases resulting in a modification from the person's true behavior, at the same time on the other hand major dramatic changes will be reflected. Many people open up only when they are alone and this peculiar behavior helps a lot in our study of the Human information processing system of an individual and also helps us in linking it with the human brain intelligence.

For example: some individual have the habit of sharing everything to one and only one true friend. With this friend they reveal their emotions, feelings and experiences. All of these things are most of the times very true as they feel that these things will remain undisclosed to the others and only the two of them can actually share the secrets of each other. This surety of confidence is only be possible now a days when the person is sitting alone online. We mean to say that when the individual is sure of this that nobody is going to comment on him on any of his act then he is relaxed and at times will reveal that part of his thoughts which is camouflaged.

Brain Intelligence is used to study our Information Processing System [8] by various ways like functional magnetic resonance imaging (FMRI) and electroencephalography (EEG). All this data is collected and processed to understand the thinking pattern of an individual. Besides this we will also need to study attention, memory, reasoning, decision making, learning, discovery, creativity etc. which are essential factors in the development of PCC [5].

Now if we go deeper in understanding of the human behavior and thinking Brain Intelligence (BI) can help us in giving human intelligence models which will further help in the core designing of the Personalized Cyber Clone, when a Personalized Cyber Clone is born an essential model is formed with internal and external elementary features.
This will lead us to make a clone of real-I in the hyper erratic world.

1.2 Reveal your True self without concealing

The unconcealed true depiction of ones personality will reveal a true persona of the individual and nothing will be left to chance. It will include the true revelation of one's emotions, his attitude, simplicity, complexity, arrogance, and other similar traits of the person. These traits will be very close to the real individual. When we will feed all this into the making of our PCC it will be able to take decisions based on brain intelligence and the typical individual who's PCC holds. At times some personal and cultural values may also guide an individual this at times can make a lot of difference so this aspect will have also incorporated while imagining the PCC.

2. Related Work:

Many of the researchers are working towards developing some kind of brain intelligence which can match the perfect individual's or the real human being's brain. The name given to such type of intelligence is Artificial Intelligence since this will not be something natural it will only be a man made set of processes which will not only give us what we want but also will deliver the results on round the clock basis too. We are successful to some extent in this endeavor of ours. Some of the researchers gave away many psychoanalysis theories regarding the human information processing system which are true and this only brings us closer to our dream PCC.
The other researchers worked on how our brain stores the memory and recalls this memory later on for further usage. Here they divided our memory into three types (i) short term memory (ii) long term memory and (iii) Sensory. Yet some other researchers are using computer science as a useful tool for creating simulations similar to the human brain model [6].

Researchers also have developed the ways and means to know that how information is stored and transferred in the human mind. It is an interdisciplinary science which links psychology, linguistics, philosophy, neuroscience, sociology etc. [9].

A basic goal of artificial intelligence is to use computers to understand and supplement human thinking. [10]. Many Researchers are formulating theories as to how the brain learns and constructs logical rules, how intelligence arises in the human brain, which information humans will forget and remember.[9].

3. Problem Statement

The most important problem is to provide comprehensive digital entities for its corresponding Real-I in terms of the individual's experience, behavior, and thinking.

3.1 Challenges and Issues of PCC

The term *individual* generally refers to a person or any specific object in a collection of all its traits. Human individuals have their very own & different needs, different goals, and creativity. There are also countless properties associated with individuals and their various relations with other people. Its emphasis is on systemic characteristics and models of human individual information processing and its broad applications ranging from the actual physical world to the virtual cyber world [4].

There are various challenges and issues in it which are categorized:

Biological Intelligence Prospective:

- The study of human Brain is a tedious job up-till now. In this we need to know how a human brain actually works and processes the information (the Human Data Processing System in totality).
- We also have to study individual's external behavior as well as internal reactions in different situations.
- The biggest of the challenges till today is how to combine the biological intelligence with digital world to make Personalized Cyber Clone a ground reality.

Technical prospective:

- To operate Personalized Cyber Clone we have to make it user friendly which every one can use easily and can enjoy its applications.
- Personalized Cyber Clone security is one of the major aspects we need to consider because if it is ignored then it can be dangerous to the masses and more so to the real individual concerned.

There are other important issues related to PCC are:

• Technique adopted

a) Incomplete Data/Logs
b) Changed/complex Situations

• Threat control

a) Security and Privacy
b) Control

• Ethics control

a) Attitude
b) Digital Clone

3.2 Essential requirements incorporate to build PCC:

• PCC must act in a swift accurate time dependent way as soon as there is a change in the surrounding circumstances.

• PCC should be flexible with respect to its changing environment. Changes in the working atmosphere of the PCC should not in any case lead to the failure of the PCC system. Instead it should learn from its surroundings and upgrade itself on a continuous basis. Until the technology on which the PCC is based becomes obsolete

• PCC must be capable of performing multitasking. It should be independent of the different circumstances of works. We mean to say that the working efficiency of the PCC should not be compromised. It should be able to change according to the changing circumstances, so the PCC should be capable of accommodating to the changes and take the advantages of the opportunities available at hand

4. Components of PCC

The various things involved into creating a PCC are shown above in Fig2 all these aspects are essential parts of real Human Brain information processing methodology. This paper focuses on how to transform all these aspects of brain in the PCC with the help of Brain intelligence and disinhibition effect.

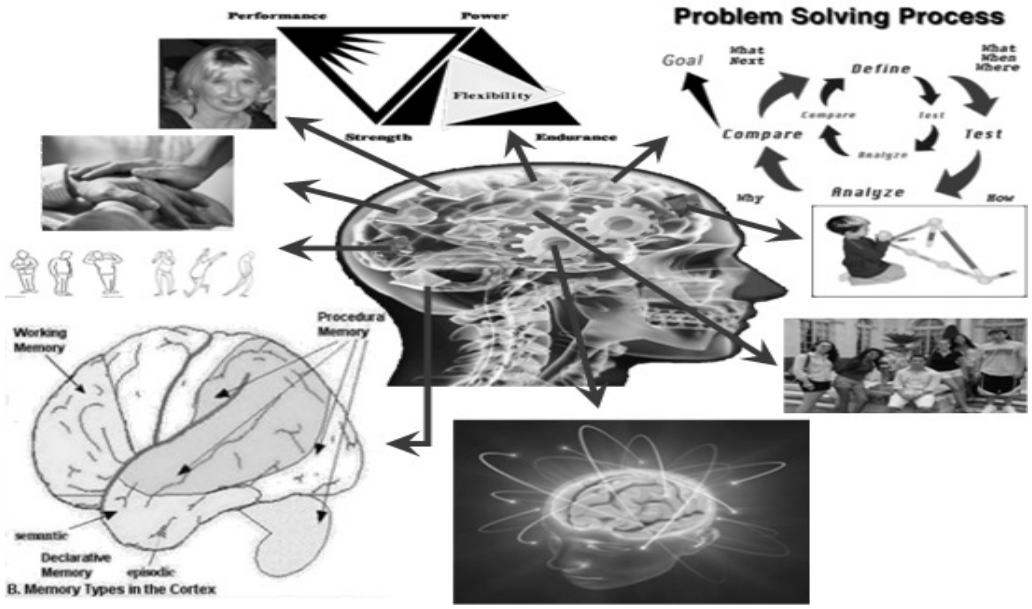

Figure2**:** Various traits of human intelligence and Personnel information processing system

4.1 Emotions and Feelings

It is well known to us that humans are full of various emotions and sentiments. These emotions are strongest when there is the thought of any one who is very closely related to the individual who's PCC we are going to incarnate. More so if the person we are talking about feels any risk for the lives of these near and dear ones then the emotions are usually violent, quick and explosive. We can in this way measure the emotions during a particular set of conditions. There may be some emotions which are similar but some of them may be entirely different their ratio and amount may vary and it is essential for us to measure this amplitude of human emotions before imagining the virtual individual like PCC.

4.2 Human Memory Process

Our brain is like a server for us which stores relevant data, it goes into the long-term memory if the data is important. Brain also creates backup of the information. The data can be past memories, study material, experiences, skill etc. Let us divide memory in two parts as:

a) Short-term Memory

i) Sensory-Memory.

b) Long-term Memory

i) Episodic-Memory
ii) Semantic-Memory

Now the short-term memory is like storing any information in the buffer for a very short period of time to complete a specific task. It is further divided in to Sensory-Memory. This sensory-

Memory means like to sense any thing or object with the help of the sensory organ for example touching a hot pan the reaction will be immediately acted by our body and this memory goes in short-term memory as it is vanished instantaneously.

The long-term memory is a permanent memory it includes past experiences, skill, knowledge etc. It is further divided into 2 parts i.e. Episodic-memory and Semantic-Memory. Episodic-memory is gained by episodes which pass in our life all are stored in this type of memory. Semantic-memory is the memory that stores the knowledge, facts, meanings etc.

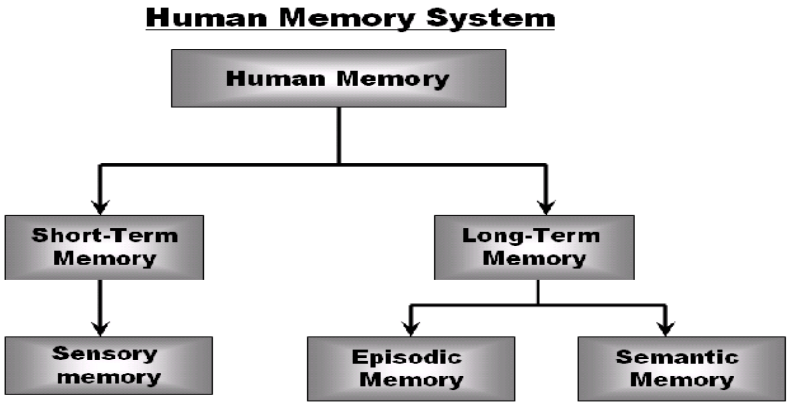

Figure3: Shows the division of memory in Human Brain

4.3 Problem solving process

Actually all individuals think of his problems first and then they think of the causes of that problem. Only after that they think of analyzing the problem after this analysis they start thinking of a possible solution of it. Many fears are there in the minds of every individual so the questions that arise in an individual's mind are like; what would happen if this happens? Would it be correct? Would it work the way I think? Would it be fruitful and safe? How others will react to it? & so on. Finally if human brain finds it correct then it implements the solution to reach the goal.

Let us see the diagrammatic representation below:

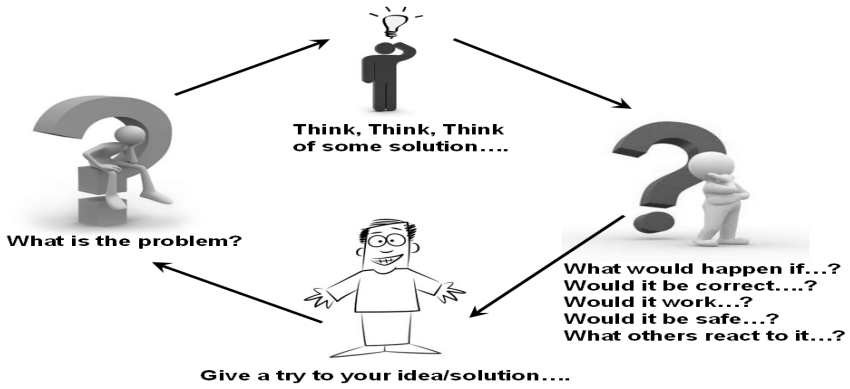

Figure4: Shows how an individual reacts if any problem occurs and tries to solve that problem by thinking in various ways.

So in short the human brain analyzes the problem then tests the solution, compare the solution with other possible solutions, choose the best possible solution and then at last go for the implementation of the solution.

4.4 Factors that effects individual capability

Capability (or appropriateness) is the ability of an individual to perform a task in a befitting way. The capability of an individual can be explained as a well defined array of behavior patterns which is a true guide which provides the ways and means to evaluate, identify, and improvise upon his behavior. Each individual's Brain tells us how much strength & powers the individual posses in respect to his physical body.

4.5 Individual attributes

Every individual is different from the other not only because of his physical appearance but also from its behavioral point of view. If a particular situation is given to 5 people, each and every one will have a different opinion to the other and will act in a different manner to resolve the problem or situation. Each and every individual have a different energy level, temperament, calmness, stress level, stamina & physical ability to work, etc. all these attributes impart altogether a different combination of the above traits and thus every individual becomes unique. All these attributes of an individual never get changed during his whole life span and remain with the person till death. All the study of these attitudes will further enhance the development and efficiency of our PCC.

4.6 Individual Characteristic

Individuals have different characteristics like faith, trust, love, affectionate, assassin etc. for example in an organisation launches a new policy which states that in one year all employees will be given a bonus of only 5000/- bucks. So for this every employee will show a different reaction. Some with a negative mind set will revolt against it and demand even more money but on the other hand the people of positive mind set will react to it positively and will be satisfied by it. So each individual has different combinations of these characteristics set which we will have to study for each individual for the development of our PCC.

4.7 Individual Interests

Individual interests like their hobbies which may be like singing, dancing, outdoor games etc. Hobbies are the interest which relaxes the individual when he/she is either stressed out or just want to spend their spare time. Likewise there are other interests of an individual in personal and professional life. For example an individual like to travel with his family and thus gets enjoyment but the others take it to be an exhausting ordeal. These types of reactions of different people are also an important part of the development of PCC.

4.8 Individual Talent and Abilities

Everyone has some talent in one or more fields like some are very talented in the field of mathematics and they love to know more and more about it and are able to understand difficult concepts very quickly. So this only happens with the help of an individual talent and his ability to grasp that knowledge. So for PCC we also need to navigate the individual abilities and talents so

that these individual interests guide the PCC according to the real individual in their field effectively and efficiently.

4.9 Individual Social behavior

As we know that we all are social animals and can not live alone we need a society to live with. This means every individual does have his own social obligations which will never match with anyone else this also can be a deciding factor in the development of the individual characteristics of our PCC.

4.10 Human Information processing system (HIPS)

Human brain processes data with the help of sense and consciousness which takes out the information from data and store it in the memory (either long or short term depending on situation) and takes required decision/action. To show the working of it a diagrammatic representation is given below which shows that sensory organs get the perception and that is passed to the short-term memory or buffer or working memory and if the information is required to be stored for a longer period of time it goes to the long-term memory as active memories and when we need any information from this permanent storage the our brain retrieves that information.

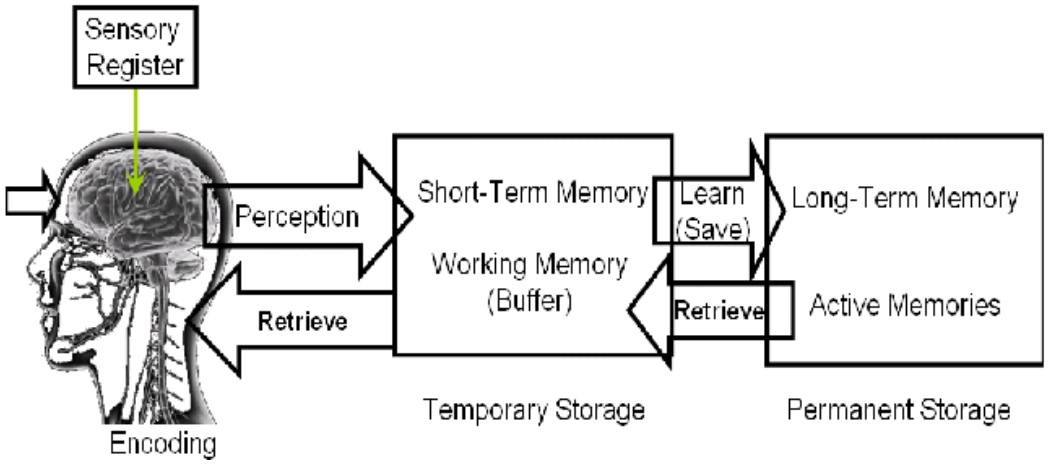

Figure5: human brain processes information and takes required action accordingly

5. Proposed Personalized Cyber Clone Framework

Here our main objective is to make a copy of real-I in the cyber space i.e. Personalized Cyber Clone, for this we have build the structure of Personalized Cyber Clone. This paper would like to mention about the Personalized Cyber Clone parts:

- PCC-brain
  - PCC-Cerebrum
    - PCC-Memory & PCC-Learning
    - PCC-Behavior & PCC-Intelligence

Here PCC means Personalized Cyber Clone. Let us take up things one by one.
Firstly, the PCC-brain will behave like real-I brain. It will have its own feelings, emotions, skill, Information processing system etc. and will act as a duplicate of your brain in any given situation. Then we take up further division of brain to PCC-Cerebrum which consists; Personality of yours, thinking pattern, tack of solving problems, individual's social behavior, your characteristics & abilities etc.

We go into more details and see PCC-Memory which will acquire a knowledge base according to us and will learn it with the help of PCC-Learning [14] and then this data will go into the PCC-Memory of Personalized Cyber Clone. PCC-Memory consists of record of your identity in the true sense of it.

Next we move on to PCC-Behavior, which will consist of our behavioral records. There are two types of behaviors one is observable behavior like body posture, gestures & body language. Another is internal behavior which is carried out in your brain according to situation and our information processing system. PCC-Intelligence will have the complete record of our thinking pattern and our professional skills as it will be having equal ability as that of real-I.

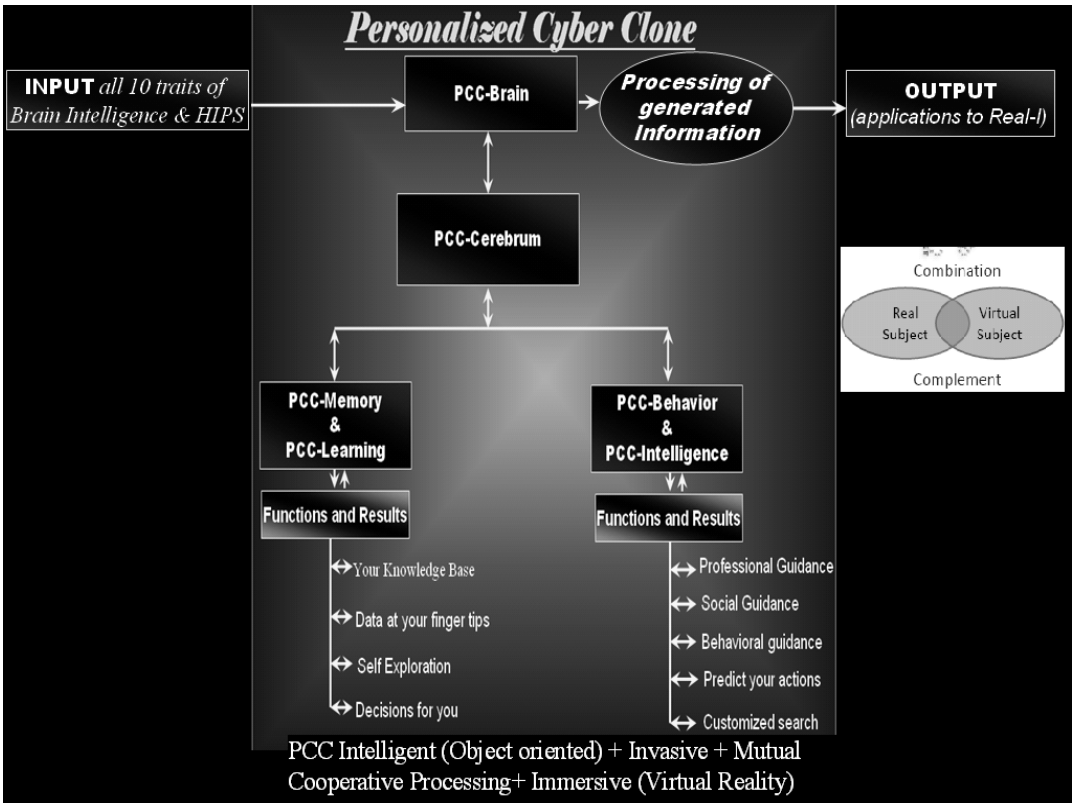

Figure 6**:** Structure of PCC Brain Intelligence Human Information Processing System Vs Real-I

PCC structure represent input of all traits of Brain Intelligence Human Information Processing System and then the PCC-Brain processes the information received by its parts and gives an output to the Real-I (Individual) in the form of its application. It will be a digital clone of Real-I and will need Input, Information Processing and its related output. We need to collect data [12],

[13] on all the 10 aspects of Brain Intelligence and HIPS (as discussed earlier in paper) for building a PCC for an individual. For making a Personalized Cyber Clone of an individual we need to conduct various studies of that individual to cover all 10 aspects of his typical type. For this we need to conduct various personality Tests via questionnaire, digital behavioral biometrics data recordings of heartbeat, brain impulses, study of body postures, study of social activities, record cyberspace activities and all vital information to cover up all the aspects of human brain intelligence, HIPS and consciousness of an individual.

5.1 Algorithm to develop PCC

Step1: Start and navigate individual's traits as well as HIPS

Step2: Design of a suitable procedure with the help of Artificial intelligence base tools to Interact with individual for the development of his own PCC.

Step3: Collect data from PCC-Memory, PCC-Learning, PCC-Behavior, and PCC-Intelligence.

Step4: Integrate all data collected from PCC-Memory, PCC-Learning, PCC Behavior, and PCC-Intelligence and store it in PCC-Brain for an individual.

Step5: Develop the final PCC.

Step6: Terminate the PCC module.

To start with the development of PCC we will first need to navigate all the traits of an individual and the human information processing system. Then the architecture of whole model is interfaced with the help of artificial intelligence based tools for an individual. Collect all data from PCC-Brain and integrate the data, the PCC will access the data via Artificial intelligence based data mining tools and finally the development of PCC can be formulated.

5.2 Algorithm to operate PCC by the real-I

Step1: Start and real-I Log in to his own PCC to activate it.

Step2: real-I enters Query.

Step3: PCC searches solution of the related query according to the user's mindset and give decision on any problem according to the real-I.

Step4: PCC can take decision on behalf of the individual if required.

Step5: PCC transfers result to real individual from virtual individual.

Step6: Terminated by real-I.

To explain the above algorithm, let us take one of the applications of Personalized Cyber Clone in real life. Suppose an individual is a doctor and is studying a case file of one of his patient and at some technical point he is stuck and wants to get help from his professional friends & guides online. In conventional system the doctor himself will chat with them and then reach to a conclusion but here the doctor will feed the problem into the Personalized Cyber Clone and then this Personalized Cyber Clone will share the problem with them (professional friends & guides) and reach on a conclusion according to the doctor concerned because PCC possess the same intelligence, skill, knowledge base, feelings and emotions. The decision [11] so delivered will be more accurate and fast.

6. Conclusion & Future Scope

There are wide range of applications that PCC will be giving to the mankind in near future like every individual will be having his own personal guide in the form of PCC and these PCC's can make their own community but here we need to further study the challenges & issues involved in the advancement of PCC in near future as:

- ✓ With the Personalized Cyber Clone the cyber community will be formed like that of the Real-I society and for a healthy living of Personalized Cyber Clone's the erratic world should have a set of rules and regulations as guidelines for the PCC's to follow.
- ✓ What will be the impact on Rea-I by Personalized Cyber Clone as a counter part in erratic world? It should be a matter of study.
- ✓ Human beings have a life cycle from birth to death will a Personalized Cyber Clone also have a life cycle?
- ✓ Will PCC's conflict lead to war in cyber space?
- ✓ Personalized Cyber Clone should be economical to have easy approach by every individual.
- ✓ To operate Personalized Cyber Clone every individual must be having Computers, internet connection (optional when required for specific applications) and basic knowledge of computers.

This is a new and advancing concept of today. This paper gives an idea of Personalized Cyber Clone, to reach its goal we all need to participate and go into its deeper details to make it a ground reality which will serve the humanity in the years to come.

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