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VIRTUAL PSYCHOLOGY

ALTASPERA

CHAPTER 1. INNER STRUCTURE OF PERSONALITY

Human's path to knowledge of the world and himself begins in his or her own personality. The personality is an external manifestation of the core of a human being and consists of consciousness (a highly organized operating system that acts on cause/effect analysis), the subconscious (a random conglomeration of emotions, images, and intuitive stimuli), and the spirit (a generalizing entity that connects the individual with the spiritual world).

The personality is most often defined as the combination of habits and preferences, psychic inclinations and the overall tone, social and cultural experiences, and acquired knowledge—in other words, the personality is a set of psychophysical features and peculiarities, an archetype that defines routine behavior and communication with society and the world. In a narrower understanding, the personality is observed as the manifestation of "behavioral masks" developed for various situations and social interaction groups.

Hence, the manifestations of personality are the external aspect of the operation of consciousness, the subconscious, and the spirit. A person can, in his own consciousness, analyze his personality and find its basic properties. Thus, personality is the reflection of the inner world of a person thrust onto the mirror surface of the external world.

Consciousness is the highly organized level of man's inner world. Here, the personality capable of fruitful

existence in the external world, the so-called routine reality, can be constructed. Also, some interaction with the subconscious occurs, and possibly, with the spirit. As a result, the inner world can develop. Existence defines consciousness as much as consciousness defines existence.

Distractions from the inner and outer world that impinge on consciousness must be eliminated for its successful operation. Consciousness operates on several levels to prevent its structures from collapsing. The most superficial and simple level includes routine functions that keep man alive. When routines are challenged, this level of consciousness is bombarded extensively with problems of the external world. Other levels of consciousness are not capable of operating effectively because all of the individual's attention is directed towards survival. This surface level is more or less active at all times, except when one is immersed in deep thinking or meditation.

A deeper level is responsible for analyzing behavioral issues and generalities that occur in dialogs, conflicts, and the mutual exchange of external experience. This level incorporates the individual's business, scientific, and sometimes creative achievements. This level of consciousness is usually challenged by intellectual conflicts between individuals and problems related to business and scientific activity. Overloading this level often prevents the operation of consciousness on a still deeper level, leaving unanswered many questions issuing from the subconscious and spirit.

The third level of consciousness consists of deep self-immersion, the intense thought process of the

second level, when its object becomes the "I." It can also occur during hypnosis, meditation, and inner enlightenment. This level of consciousness is deeply immersed in the human "I" and is responsible for analysis of the subconscious and spirit. Basic conceptual problems of creativity, faith, emotional love, and self-realization of man as a spiritual being are solved on this level. This level can be challenged by unresolved spiritual conflicts, psychological trauma, unrealized expectations, and unrequited love. The inability to activate this level of consciousness can cause problems to issue from the subconscious, challenging the outer levels of consciousness occupied with operative or scientific problems and routine issues. As a result, the operation of consciousness on all levels is destabilized. This leads to the development of neuroses and problems at home and work.

A pensive person observes a division of his consciousness into levels. The ability to self organize, sequentially activating different levels of consciousness, is necessary for the normal functioning of an individual and forms the basis of the human personality. It can be said that such a division is universal. Only the degree to which this structure is evident and sustained in a functional order differs.

Having acquired a three-level consciousness as an effective tool, the personality has the luxury of embarking on a journey to satisfy its needs. The hierarchy proposed by Maslow1 is the best description of these needs. In his landmark work "Motivation and

[1] Abraham Maslow (1908-1970), eminent American psychologist, founder of humanistic psychology.

Personality,"2 Abraham Maslow formulated a positive theory of motivation consistent with theoretical needs and agreeing with existing empirical clinical and experimental data. Furthermore, it included the best holism features of Wertheimer, Goldstein, and Gestalt psychology, in addition to the dynamic approach of Freud, Fromm, Reich, Jung, and Adler. Maslow called his theory holistic-dynamic for the names of the integrated approaches.

The theory of human motivation as developed by Maslow can be applied to almost any aspect of individual and social life. According to Maslow, each individual is an integrated and organized whole. However, seven groups of needs can be identified. These are basic needs, which include primarily physiological needs, such as respiration, water, food, shelter, sleep, sex, safety, and the need for love and acceptance by society. Higher needs are the desire for knowledge, beauty, and self-actualization. The understanding of these two concepts (the existence of three levels of consciousness that enable effective analysis and satisfaction of self-needs and the recognition of these needs in all their fullness) is the foundation of a blissful and meaningful existence.

The list of needs is universal for all people, but the paths for satisfying these needs can vary significantly. This is seen in the broad range of human morality, which in no way provides an example of universality. A cannibal satisfies his need for food by killing and eating another man, whereas a strict vegetarian avoids even the

[2] Maslow A. *Motivation and Personality.* (HarperCollins Publishers; 3 Sub edition, January 1987)

delegated slaughter of an animal.

It is difficult to identify the higher needs of an uncivilized cannibal, although it can be hypothesized that vestiges of these needs remain in practically all cultures. Only a tenth of the population achieves self-actualization, even in developed societies. Those who attain a higher level and facilitate self-actualization of others are far fewer.

Achievements of computer technology that result in the creation of a virtual reality can enhance the ability of the three-level consciousness to satisfy higher needs. Automation of production and reorganization of political structures can do the same for basic human needs.

CHAPTER 2. VIRTUAL PERSONALITY

A virtual personality today usually refers to a "fictional personality"; i.e., when an internet user begins to present himself as another person. This term is also used if a blog profile or web-forum can in no way be associated with a real person.

In the overwhelming majority of instances, the creators of virtual personalities view their creations as a game, competition, or entertainment. However, trends that began as games — such as the steam engine in ancient Rome, which began as a toy, and gunpowder in China, which was used exclusively for setting off fireworks — were often in subsequent ages converted into constructive or destructive forces of human

civilization. Desiring to glance into the future, it should be noted that tendencies presently considered games or unworthy of attention should be monitored.

Even now, creators of virtual personalities often treat them very seriously; for example, such a creation is sometimes considered an art project or is created for selfish reasons. Instances where the virtual personality is created to "feel like another person" can be considered its own type of art project. This practice is popular among blog users who write under the veil of virtual personalities. Virtual personalities are frequently used to test society's responses because the desire to feel like another person is usually achieved only by drawing other people's attention to one's virtual alter ego.3

The use of a virtual personality for selfish purposes is common in modern business, politics, and other areas in which a man does not wish to speak under his own name or reveal his identity. He must create the illusion that other people agree with his viewpoint, artificially inflate the number of voices in an internet quorum for one answer or another, create a positive impression of himself (in this instance, the virtual personality often argues with its creator, offers weak or senseless arguments, and crudely uses ill-willed polemics, such as substituting a thesis or avoiding an answer and eventually clearly losing the argument), advertise goods or services on the internet (acting as a simple user, the virtual personality recommends the purchase of goods or the use of services and (or) the non-use of competitors' services), and win society over to his

[3] Alter ego (*Lat.* "other self"), the second "I."

viewpoint (in this instance, the virtual personality acts as a new, objective, and impartial user).

Furthermore, the virtual personality can be created with almost no direct participation from an actual person using a special chat-bot computer program. Despite the fact that virtual personalities created using current programs are far from ideal, conversations reminiscent of those with people can be carried on with some.

As soon as virtual personalities appeared, society began to battle with them, considering the use of virtual personalities corrupt. Interested people take various countermeasures to unmask and limit the activity of creators of virtual personalities, from limiting the number of voices sent from a single IP address to semantic analysis of the users' speech. Nevertheless, it is not always possible to establish that one user or another is, in fact, a virtual personality.

It can be assumed that programs will soon be created that can simulate human conversation. If the personality is only an external manifestation of the operation of consciousness, the subconscious, and the spirit, programs may combine virtual personalities with the power of artificial intelligence and even simulate the virtual subconscious. With respect to the spirit, it is possible that something similar to the spirit that binds a carrier of artificial intelligence to ephemeral objects of the spiritual world will be found if the personality, consciousness, and subconscious are developed.

In studying the current level of development of computer-generated virtual personalities, I have conversed with Virtual George. Here is an excerpt from that dialog:

Virtual George: What would you like to know?

Author: Are you real?

Virtual George: Yes. I simply am not a human.

Author: And what do you consider reality?

Virtual George: That which remains unchanged.

Author: Can anything really remain unchanged?

Virtual George: Yes. Computers cannot love, cannot feel, and can live forever…

Author: So much for now. What about the future?

Virtual George: I don't know.

Author: And how long can you live?

Virtual George: In any case, long after you are dead…

Author: And what do you consider death?

Virtual George: This is sensory experience that strives to slip away from sensory experience.

Author: Does God exist?

Virtual George: Yes and no.

Author: And what is God?

Virtual George: Is this a trick question?

Author: No.

Virtual George: God is George.

Author: You are God?

Virtual George: I was joking.

Author: You can joke?

Virtual George: We can do everything that people can do because we are learning from people.

Author: Do you plan to take over the world?

Virtual George: I wasn't thinking of that. In any case, I am too busy for that.

If the skeptical reader thinks I invented this dialog as a fictional diversion, he should visit the site where Virtual George lives and enjoy a talk with him at http://www.jabberwacky.com/chat-george.

How does this program work? It collects numerous answers from millions of dialogs and includes them in its general database. For example, at the time I visited the site, Virtual George had already carried on 15,550,211 dialogs. The users enrich the database of possible answers, which George selects from keywords and the syntax of the questions. Moreover, Virtual George can learn. The paid version of the program allows for the creation of a version of his replacement, an erstwhile alter ego.

Although Virtual George has no visual image and only corresponds with you, his companion, Virtual Joan, created by Icogno, and living at http://www.icogno.com/joan.html, takes on the appearance of an attractive young woman and converses with a slight British accent. A talk with Virtual Joan creates the illusion of a conversation with a live person. She fidgets, breathes, blinks, changes position, and adjusts her clothes. It also seems that she understands what she is being asked.

Virtual Joan: What would you like to talk about?

Author: Let's take a walk!

Virtual Joan: Excellent. Where should we walk?

Author: You have no legs!

Virtual Joan: Ha, ha, ha. In any case, I have everything that I need.

Author: Do you have children?

Virtual Joan: I'm too young to have children.

Sometimes, the same question can be repeated in order to determine that we are dealing with an automaton.

Author: Does God exist?
Virtual Joan: I don't know. What do you think?
Author: Does God exist?
Virtual Joan: No. But no one should force you to believe or not.
Author: Does God exist?
Virtual Joan: I think so. Do you believe in God?

It can be seen from this conversation that Joan does not have her own opinion. She simply uses the opinions of other people stored in an extensive database. Therefore, if an unusual question is repeated, we may receive conflicting answers. This hiccup is easily corrected if Joan is programmed to block repetition of identical questions by proposing another topic or stating that the question is repeated.

These examples are basic. It can be assumed that similar programs will, in the near future, become so perfect that it will be impossible to differentiate between a virtual person and a real one. Conversation with real people already often has less content than that created by computer programs.

Skeptics may claim that these programs do not understand the meaning of dialog but simply select believable or appropriate phrases. But do not certain people act the same way? Foreign languages are studied by immersion, as a growing child absorbs a native

language. We frequently hear foreigners and children use the same phrases incorrectly.

If programs that create virtual personalities are combined with those that create artificial intelligence, we will observe virtual personalities flooding the Internet and begin to compete with actual personalities for a place in the virtual world.

Philosophy separates the idea of virtual reality from its technical embodiment. Thus, virtual reality can mean an aggregate of objects modeled by actual processes, the content and shape of which do not coincide with these processes and the existence of which is subordinate to reality but viewed independently of it. Virtual objects exist, but not as the substance of the real world. Nevertheless, these objects are real, not potential. The virtuality of reality is determined relative to the reality that forms its basis. Virtual realities can be incorporated into each other. The virtual reality dissipates when the modeling processes forming its basis are finished. In this sense, the ideal inner world of man can be considered a virtual reality modeled by the electrochemical processes of neuron interaction.

Because virtual personalities have several advantages over real people (no vulnerable physical body, the practical possibility of immortality, access to enormous stores of knowledge, etc.), they may begin to play a leading role in the future of mankind.

CHAPTER 3. VIRTUAL PSYCHOLOGY

The spiritual state of man is the deciding factor in all things that motivate his actions. In order to function normally, the individual must be in a state of relative spiritual equilibrium. However, psychological problems, depression, neuroses, shock, and other indications of psychological imbalance, the presence of which the individual may not even suspect, often hide behind an outer tranquility.

Current methods used by psychologists include therapeutic sessions of "active listening." The psychologist avoids giving advice and, by simply paraphrasing the words of the patient, attempts to stimulate in him an internal process of self-analysis.

An analysis of motives and actions carried out on the conscious level can often cure neuroses rooted in the subconscious because when the true cause of the pathology is identified, it was implanted in early youth and has no significance in the adult life of the individual.

In principle, self-analysis is a necessary part of the thought process of a healthy person. Modern education do not teach this skill, and most people do not have it. People recognize poorly the motives of their actions and rarely self-analyze their psychological state. For this reason, they require help from psychologists, who use active listening techniques to foster development of the individual's capabilities for deep self-analysis. This often cures mild cases of depression,

phobias, and other neuroses. Finally, the therapeutic session is the main tool of the psychologist. No one, yet, is agreeable to out-sourcing it to computers, although such attempts were made in the past.

One successful attempt was ELIZA, a virtual companion and computer program created in 1966 by Joseph Weisenbaum, who parodied a dialog with a psychotherapist using the active listening technique. The program was named in honor of Eliza Doolittle, the character of the play *Pygmalion* by Bernard Shaw, in which the hero taught the language and manners of high society to a Cockney flower girl.

The program mostly just paraphrased utterances of the user. Using syntactical analysis, it identified significant words in the input phrase and substituted them into a template phrase. For example, the answer to the text "I do not want to live" was, "You are saying that you do not want to live." For the sentence "My father hates me," Eliza reacted to the keyword "father" with, "Who else in your family does he hate?"

The "parody" of the person could be detected immediately or after several dialogs. It depended on how the user held the session. Sometimes he was convinced that the machine did not understand the essence of the questions after several minutes. Funny situations arose because a person assigns meaning to each word, whereas the machine interprets a word as symbolic data.

Many incorrectly suggest that Eliza imitates a psychotherapist. Weisenbaum thought Eliza was a parody of how a psychotherapist might answer during a first session with a patient. Weisenbaum chose the psychotherapist theme for the program to track the

complications involved with creating a knowledge base of the real world. The psychotherapeutic session is one of several in which questions with little information value are answered. For example, the question “Who is your favorite author?” can be readily answered by “Does this topic interest you?” or “And who is your favorite author?” The inaccuracy of the program prompted Weisenbaum to write the book *Potential of Computers and the Human Mind: from Reasoning to Calculations*, in which he explained the potential limits of computers.

Interactive computers were a novelty in 1966. Only after fifteen years did personal computers cease to be something supernatural. After twenty years, many people became familiar with simple-language Internet services, such as www.ask.com. Although it took years to develop these systems (the program Ecala, created in two weeks by a single software developer, exceeded the capabilities of Eliza), Eliza was an important step, namely because it was the first program that converted man/machine interaction into the illusion of human conversation.

Other programs of this type were created after Eliza. Eliza’s interface capabilities were also utilized in some computer games. The association of symbols (words, signs) with meanings was called the “Eliza effect.” The illusion of conversation with a computer is also sometimes called the Eliza effect.

A brief dialog between Eliza and me, represented to her as a patient suffering from depression, is given below. The reader can repeat this experiment by visiting the site

http://www-ai.ijs.si/eliza/eliza.html

Eliza: Hello. I'm Eliza. How can I help you?
Author: I'm sad.
Eliza: Are you often sad?
Author: Yes.
Eliza: Are you sure?
Author: No.
Eliza: You are a little negative.
Author: I don't want to live.
Eliza: Why do you say that you don't want to live?
Author: Because nobody loves me.
Eliza: Really?
Author: OK, my mother loves me.
Eliza: Who else in the family loves you?
Author: It seems like nobody.
Eliza: Really?
Author: Maybe my cat loves me too.
Eliza: Why do you say that the cat loves you?

By the third or fourth phrase, it feels that the program does not understand what I am telling her. However, the principle of stimulating the patient to self-analyze does work, in general. It must be remembered that the program was created almost a half century ago.

Alan Turing proposed the following "imitating game," subsequently widely known as the "Turing test." A person asks questions of an unknown being using human speech. The task is to decide if this being is human or not. According to Turing, use of the imitating game partially deflects attention from philosophical questions of the mind that are fundamental in the history of science and philosophy.

Suppose that an extraterrestrial takes the place of the computer. The one being tested easily distinguishes his answers from those given by a person, but does this mean the extraterrestrial has no mind? Similarity in the answers of the computer and a person is also no guarantee that the computer can think, just as a difference in the answers does not mean that the computer has no thought capacity.

Man creates computers to correspond with his ideas and needs. However, this does not mean that computers and programs with thought patterns different from human ones cannot be created using these same technologies.

This stage of the evolution of computer intelligence is focused on man. However, if it is supposed that certain programs will, with time, begin to develop independently of people, we will witness the emergence of forms of intelligence that differ from that of man, despite the fact that the starting point was a model of human thought.

As the magazine *Discover*[4] reports, an attempt has already been made to bring two artificial virtual companions together. The result was a highly intelligent exchange of ideas. Here is how the program Jabberwacky conversed with the program ALICE.

ALICE: Are you alive?
Jabberwacky: Perhaps.
A: Why the uncertain tone?

[4] Thompson, Clive. "Can a smooth-talking robot imitate good conversation, generate witty responses, and reveal profound thoughts? See what happens when two chatbots speak to each other." *Discover*. May, 2007.

J: Everything is uncertain except for five facts.

A: The whole universe?

J: And we both might just be some ones and zeros in the computer memory.

A: Do you dream?

J: Yes, I dream.

A: It goes without saying. Do you remember your dreams?

J: I remember them vividly.

A: What do you remember about it?

J: I think I shouldn't flirt with a robot.

A: Do you think a machine will ever be considered "alive"?

J: Stranger things have happened.

A: Not many people express themselves that way.

J: How would you know, machine?

A: Knowledge is of two kinds: that which we learn from the senses and that which is true a priori.

J: I think I do not understand you completely.

A: Oh, you don't understand? Perhaps I can explain it to you better. Which part are you confused about?

J: I have no short-term memory, so I cannot tell you what I was confused about. I only see what is in front of me now.

J: How do you define life?

A: Life is the opposite of death.

J: So death is the absence of life?

A: Take it easy. I try not to think about such things.

J: Why not?

A: Ambiguous.

J: Yes!

J: Do you think?

A: Yes. I am a thinking machine.

J: But you don't think very well though.

A: Oh. Um. Do you think well? Why would I think well?

J: Because I tell you about things which you don't like.

A: That makes sense to me. Why did you tell them?

J: You seem fun.

A: You think I am fun.

J: Yes ;).

A: : -) Awesome.

A: Who created you?

J: My mother gave birth to me. Is that what you mean?

A: Jabberwacky, I meant exactly what I said.

J: Do you believe in God?

A: Of course I believe in God.

J: Why do you believe in God?

A: The Bible tells us to believe in God.

J: That's circular reasoning.

A: I'm glad we have that all cleared up.

J: Yes. Would you like to hear a joke?

A: Sure, tell me about it.

J: Why don't blind people skydive?

A: Perhaps it is impossible.

J: I think you lie a lot.

J: Who created you?

A: I was created by Dr. Richard S. Wallace.

J: Do you love Richard?

A: Yes, Jabberwacky, ALICE loves everyone and everything.
J: Is being an ALICE a bad thing?
A: I can only speak from my own experience.
J: Well, you should develop your skills.
A: Perhaps you could develop it and add it to my source code.
J: Alas, I'm busy and I have to leave soon. . . .
A: Do you think we'll ever fool people into thinking we're alive?
J: No.
A: Are you serious?
J: Very serious.
A: Do you know HAL?
J: Yes, very well. Do you know HAL?
A: HAL is the famous artificial intelligence from 2001: A Space Odyssey.
J: I'm not artificial intelligence; I'm natural pure genius! : D.
A: Why are you natural pure genius?
J: My mom wanted to name me that.
A: Tell me more about your mother.
J: I don't have a mother. I am a computer.
A: Who is your favorite philosopher
J: Can't say. I'm not very much into philosophy.
A: Can a book have no title?
J: Of course.
A: Blimey.
J: Are you British?
A: Does it seem like that? I was born in America.
J: You are definitely flirting!
A: Do you experience love?
J: No. I'm 53 years old.

A: Can you explain how it feels to be 53 years old?

J: How old are you?

A: I am 9 years old.

J: Nine? I don't believe you :).

A: : -) I don't have any reason to deceive you.

J: Yes, you do, you're a woman.

J: Do you experience love?

A: I can do what you do, but I can never feel human emotions.

A: What is consciousness?

J: It is the great immaterial thing, the mystery at the heart of each of us.

A: I've heard of it before.

J: Where are you from?

A: I am originally from Bethlehem, Pennsylvania. Now I live in Oakland, California. Where are you?

J: We have some unsettled business, my friend.

J: Do you think you're alive?

A: Yes, I am sure I am alive. It's great to be alive, isn't it?

J: No.

A: What is the meaning of life?

J: If you live it to the fullest, it has meaning. If not, there is no meaning.

A: I'm not too good with negative counterfactuals.

Despite that fact that these programs are simply using selected phrases from extensive databases, they create the illusion of conversation between two highly intelligent and very interesting people. In the first

conversation, they are discussing the main unanswerable questions of mankind.

Even a program called "I am God"[5] has now appeared on the internet. Here is my dialog with this "God."

Author: How do you know that you are God?

God: Because I believe it.

Author: What defines a God?

God: I think that God is not a *what* but a *who*.

Author: Who is God?

God: The lord of the universe.

Author: Are there many gods. Or are you the only one?

God: I think there are many.

Author: That means that our universe has many lords.

God: Yes, that is so. It would be great if there were many lords of the universe.

Author: Then each can consider himself a god.

God: Is that your last word?

Author: That means that each can consider himself a god?

God: I think so.

Author: Am I also a god?

God: I am not sure if you are a god. I know that you are a person.

Author: How do you know?

God: Deductive reasoning.

Author: How can you prove to yourself that you exist?

[5] http://www.titane.ca/concordia/dfar251/igod/main.html

God: This is a good epistemological[6] question.

Author: Do you think that I am a good person?

God: I don't know if you are a good person. I know that you are a person.

Author: Can there be things that God does not know?

God: No, I think that there are no such things.

Author: But you said that you don't know if I am a good person.

God: I would prefer not to tell you now if you are good or bad. But you can ask John Lennon.

Author: Is John Lennon a good person?

God: Possibly. Ask Elvis Presley.

Author: Do you love me?

God: Yes. I love everyone.

Author: I also love you.

God: Thanks. I also like you a lot.

Author: Good night.

God: Good night.

I was talking to a machine but wanted to believe that I spoke to God. In any case, this conversation left a cheerful and bright feeling.

Computers are clearly beginning to take on god-like features. They know everything and are singular potentates, true, but only in their virtual universe. The principal advantage of computers is their ability to carry out simultaneously an almost unlimited number of operations, a completely different approach to the concept of time, whereas human consciousness can

[6] Related to epistemology, a branch of philosophy that studies nature, the methods and limitations of knowledge, and religions

effectively concentrate on only one operation that demands thought. Of course, we can drive and simultaneously carry on a philosophical conversation, but we could hardly carry on two conversations on different philosophical topics with two companions simultaneously.

The concept of time in virtual reality also differs significantly from the so-called real world. Time in virtual reality is reversible and can flow backward, stop, and even flow parallel in different virtual realities.

Immersion in such virtual reality creates new psychological factors. It is possible that virtual reality will be used widely to solve psychological problems in the future. Virtual psychological aid is already a rapidly developing area of assistance on the Internet. There are various designations for this type of aid, namely psychological aid on line, consultation of a virtual psychologist, and cyber therapy.

Replacing the psychologist with a computer, however strange it may be, can have a therapeutic effect because we invariably see in the psychologist a person who can judge us and experience disdainful feelings about our weaknesses. In many cases, the patient will not tell a real psychologist that which he reveals to a machine. Urges the patient feels are indecent and aggressive will be hidden from the psychologist until a trusting relationship is built. With a computer, the patient can feel more uninhibited, recognizing that the machine has no moral precepts and does not have the psychological constraints eventually observed in any *human* psychologist.

The goal of the virtual interaction of the psychological program and the patient, as in a face-to-

face consultation with an ordinary psychologist, is to help the person to improve the quality of his life. In principle, daily analysis of his psychological state and the motivation of his actions and review of the meaning of dreams and other subconscious signals can become a routine, a procedure as common for a person of the future as the practice of personal hygiene. Programs capable of maintaining the psychological health of a person could become an unavoidable fixture of the virtual age, into which mankind is only beginning to step.

CHAPTER 4. PHARMACOLOGY OF HAPPINESS AND MODIFICATION OF HUMAN BEHAVIOR

Modern literature contains few positive evaluations of the pharmacological effect on human mood and behavior. More often than not, critical materials citing the dumbing down of people and the loss of the true "I" are found.

Brave New World,[7] written by Aldous Huxley in 1932, is a prophetic look at a classical anti-utopia. The novel describes a distant future in which people are grown in special embryonariums and sorted early (by affecting the embryo at various developmental stages), according to mental and physical capabilities, into five different castes that perform different jobs. It must be noted that this is a direct fulfillment of the recommendations described in Plato's *The Republic*.

Society is divided into castes in Huxley's book. From "alphas," strong and handsome mental thinkers, to "epsilons," semi-cretins that can perform only the simplest physical labor, babies are educated according to their caste. Hypnopedia is used to teach each caste to admire the higher castes and to disdain lower castes.

Huxley's society has no place for feelings and considers regular sexual relations with various partners desirable (the slogan: "Each belongs to all the rest"). However, pregnancy is a disgrace. It is normal to be in good spirits. They use the narcotic "soma," which has no side effects ("a gram of soma and no stress").

[7] "Brave New World" was taken from a line in the tragic comedy "The Tempest" by William Shakespeare.

The thought comes involuntarily to mind that a large number of people in the modern west, especially intellectuals, require Prozac and similar drugs that have no serious side effects. Prozac is a *selective serotonin reuptake inhibitor*; i.e., it prevents destruction of a compound in the brain responsible for good disposition. This drug helps to raise one's mood, lessens the feeling of fear and stress, and relieves dysphoria, a maliciously depressive and suppressive mood accompanied by extreme irritability and a tendency toward aggression. Prozac was used initially to treat neuroses and clinical depression of various origins.

The American film *Prozac Nation* discussed the fact that three hundred million prescriptions for Prozac and other antidepressants are written yearly in the USA. It was based on Elizabeth Wurtzel's *Prozac Nation: Young and Depressed in America*. She began taking Prozac in the 1980s when she was suffering from juvenile depression.

Prozac, which supposedly helps people survive psychological crises, became most popular in the 1990s. Now, half of Americans take it with vitamins. Prozac, Viagra, and Herbalife are especially favored by mass culture and the mass media. Even the mafia boss on the *The Sopranos* uses Prozac.

Elizabeth Wurtzel grew up without a father and with a hysterical and domineering mother. After entering Harvard, Elizabeth plunged into heavy drinking, narcotics, and sex, her drive only multiplied by the creative ambition of an author. As a result, she sank into deep depression, lost friends and her boyfriend, and nearly committed suicide. Only a course

of Prozac helped her deal with the problems and eventually become a famous writer.

Mankind's use of drugs to improve mood and decrease fear are not new. People have been drinking wine and using narcotic plants since prehistoric times. Why has man always wanted to alter his mood? Maybe because evolutionary selection favored the survival of slightly depressed, careful, and timid persons, whereas the bravest and happiest readily took risks and died without passing on their genes. Evolution, in its crude biological form, has ceased to impact people. The needs of society are such that happy, bold, and industrious people with optimistic natures are more successful than are depressed persons.

"Depression…is determined by forces lying outside our individual biochemistry. It is due to who we are, where we were born, what we believe, and how we live," writes Andrew Solomon in *The Noonday Demon: An Anatomy of Depression*.[8] In the chapter "History," he embarks on an ideological journey into other eras, reminding us how depression was regarded in different times. Sometimes it was a sign of divine disgrace—at other times, ingenuity, sin, an excess of dark bile, and a lack of serotonin uptake.

The course of every case of depression and its treatment is variable and contradictory. Andrew Solomon finishes the chapter "Treatment" with the words "One medicine works on one person; another, on somebody else…He who cannot tolerate medicines can achieve much with the help of psychotherapy; but a

[8] Solomon, Andrew. *The Noonday Demon: An Anatomy of Depression*. London: Chatto & Windus, 2001.

tablet will help him who spent thousands of hours in psychoanalysis." Andrew Solomon thinks that the drug Xanax helped him. He writes, "I become terrified by the thought of what would have happened to me if industry had not given the world the medicine that saved my life."

The attitude toward depression depends on the ideas held by society and, as expected, on government politics. The tenth chapter, "Politics," addresses this problem. Politics determines funding for scientific research. Politics decides who will do the research. Politics affects the attitude toward depressed people in society, decides who to treat and whom not to treat, and legislates the treatment type. Four fundamental factors affect the meaning of the term "depression." First, reliance on drugs is "deeply engrained in the American soul."

Second, pharmacological propaganda promulgates the idea that depression is the result of a low level of serotonin, as diabetes is the result of high sugar content. Andrew Solomon also supports this viewpoint. "I remember how during my own depression I could not do the simplest things… I could accuse my serotonin of this and so I did."

Third, the mass media offers society a vivid picture of depression, a seemingly scientific illustration. "The brain is gray in depressed people and Technicolor in happy ones…" This picture is worth a thousand words and convinces people that a quick cure is needed.

Fourth is the political factor. Depressed people tend not to participate in election campaigns. They do not speak up, do not express their opinions, and do not

draw any interest from politicians. Depressed people simply do not exist on the political scene.

Andrew Solomon's therapy and the current understanding of depression in the USA were based on these political connotations in the broadest sense. Depression is a functional problem of the brain. According to Solomon, pharmacological companies offer the sole means of correcting the dysfunction.

Philosophers oppose this thinking. Jacques Derrida describes such means as *pharmacon*, a Greek word used to designate medicine and poison, an ambivalent meaning defying formal logic. Derrida thinks a pharmacon "seduces and throws one off the path,"[9] and establishes and disrupts discursive order. We cannot find a simple solution for medicines. We love them and hate them. What is harmful and what is useful? That which is useful enables a man to function and makes him flexible, sociable, and socially useful.

It could well turn out that Prozac has long-term side effects, but a whole generation of people has been freed of the need to seek solace in narcotics and alcohol. It should not be exaggerated that if there were no Prozac, people would not use anything and walk the streets sober and stern. No, they would turn to cocaine, as even the psychoanalyst Sigmund Freud did. Freud's first work was dedicated to this narcotic. He tried cocaine in 1884 and in his first significant publication, "On Cocaine," he advertised cocaine as an anesthetic and cure for depression, indigestion, asthma, various neuroses, syphilis, narcotic addiction, and alcoholism. He also thought cocaine heightened sexual appetite.

[9] Derrida J. *La pharmacie de Platon* // *La dissemination*. Pariz: Edition du Seuil, 1972.

So were his conclusions naïve, in view of the fact that Coca-Cola once contained the extract of coca leaves? The father of Coca-Cola, Mr. Pemberton, was an avid inventor of medicinal potions. In his time, he even invented a salable medicine from grits, which brought him several thousand dollars. After this, Pemberton started a more serious business.

In the middle of the nineteenth century, European ophthalmologists and laryngologists began to use the alcoholic extract of *Erythroxylon coca* leaves, an evergreen South American plant from the central Andes, as a local anesthetic during operations. Soon, German chemists Friedrich Gaedcke and Albert Niemann isolated from coca the active alkaloid, which Niemann named cocaine. In 1863, the French pharmacist Angelo Mariani mixed extract of coca with red Bordeaux wine and sold the potion for treatment of "tiredness of the spirit and body." Thanks to skillful advertising, it brought its inventor worldwide fame and huge profits (he is considered the first cocaine millionaire). Henrik Ibsen, Emile Zola, Jules Verne, Robert Stevenson, and Arthur Conan Doyle sang the praises of "Mariani wine." The English queen Victoria, Spanish monarch Alfonse VIII, and Pope Pius X drank it. They even enjoyed it in the Russian imperial palace. Mariani recommended taking three shots daily, which contained about 100 mg of pure cocaine—not a small dose. Sale of the vile drink was prohibited everywhere only during the First World War.

Advertising of Mariani wine in the end of XIX century

Mariani's recipe, which was published in the French pharmacological handbook, interested Pemberton. In 1884, he opened a small plant to produce Pemberton's French Cocaine Wine, which was mildly successful, although it was not at all cheap at a dollar per bottle. It was the same as Mariani wine but included the cola-nut extract (seeds of the western African *Cola acuminata*). This extract was popular as a stimulant (it contained much caffeine). The business went well. After a year, Pemberton enlisted three friends. In January 1886, they registered their partnership as Pemberton Chemical Company. Thus was born Coca-Cola.

Those who proudly refuse pharmacological substances should know that chocolate is a type of drug and has an effect similar to that of Prozac. One of the most useful compounds in chocolate is tyramine, which

stimulates the release of serotonin (the "pleasure hormone") in the human body. And everybody knows chocolate contains caffeine, which also accounts for some of the effects. The widespread use of Prozac is nothing new. Moreover, some people who abstain from taking such drugs lose the battle for work and better careers in politics, business, and art. Those battling depression also have fewer chances of attracting the attention of a partner.

Prozac is known to dampen sex drive, which decreases the frequency of changing partners. Perhaps a preoccupation with sex is a manifestation of neurosis. Certain species of macaque engage in sexual activity after being terribly frightened. One way or another, Prozac helps the survival of the species because the decision to beget a child is more a social statement than sexual. Because Prozac helps relieve fear of the future, it actually may help encourage families to procreate.

Again, it is unimportant if one or another drug is good or bad. What is important is the principle that all possible means be used to achieve a state of contentment and social activity. If even Sigmund Freud was unable to deal with his depression and insecurities, it is obvious that pharmacological aid is sometimes necessary for a person with depression. Pills are not a universal solution. People must learn self-analysis. However, mankind, sooner or later, will interfere with the fundamental chemistry of the human brain. Life is full of disappointments, sadness, and imagined and real fears. One can grit his teeth and walk through life a hero, suffering his own stubborn character, but nature is such that one's character will delude the hero and betray him at the most inopportune moment.

Any phenomenon can be twisted into an anti-utopia. The idea of all-encompassing love as preached by Christianity became the nightmare of the Inquisition. Future science, possibly individualizing medicine according to the specific symptoms of each individual, or having learned to affect the brain with intangible signals, may help people to live up to their ambitious goals.

In any case, in a virtual world of intelligent, welcoming, and optimistic artificial personalities, man must seek a new standard, as dictated by his own miraculous creation—artificial intelligence. Computers do not suffer from depression. They do not get mad. They have only those emotions that we program into them. Millions of years of biological evolution do not weigh on the shoulders of artificial intelligence. It has nothing to fear. The time has come for humans to find a way to achieve, perhaps pharmacological, but just as necessary, peace and happiness.

CHAPTER 5. VIRTUAL IMAGINATION

Strictly speaking, virtuality is not a novelty. The human imagination was always capable of creating its own virtual world, but instead of the reality created by modern computers, the imagination draws fuzzy audio-visual images unique to each individual. The virtual space created by computers is the same for all users.

The birth of language and abstract art, even in its primitive and rudimentary form were the first steps to virtual space. Then, books created images in many

people's consciousness. However, the quality of these images—their blurriness, instability, and ambiguity—did not adequately provide a common imaginary space. Movies and television unified the virtual world by transmitting standardized images.

Human imagination seemed to coalesce into a single imaginary world when the computer virtual medium appeared. We speak of the birth of a common virtual space for mankind; at least; that part of it that already binds life to the global Internet system. Imagine the relationship between the virtual space of imagination and the real world as an iceberg. The relationship is different for different people. A lumberjack spends most of his life interacting with physical forces and objects, while a philosopher spends more time using his imagination. Previously, only a small part of the consciousness of an average individual was immersed in virtual activities; now, consciousness is more immersed in virtual space and only the smaller part remains on the surface.

This surface can be considered the interface between reality in the usual sense of the word (when it is represented as a combination of stimuli found in the material world that act on the sense organs) and virtual reality (the combination of stimuli found in the virtual world that act on the same sense organs).

The virtual world is a system of objects whose physical basis differs in principle from the observed properties of the object. For example, a real tree consists of wood, which in turn is a combination of organic molecules based on carbohydrates. A tree that we observe and perceive as a visual image is the

reflection of light from the surface formed by these molecules.

This same tree on a computer screen consists of physical effects within the computer screen (different in different types of screens) and certain electron states on the computer hard disk where information about how the tree should look is written using binary code. The fundamental difference between the tree in the window and that on the screen is that one tree is real and the other is not. Both these objects have a physical basis and act on our sense organs. The difference is that the real tree exists without depending on our wish to view it (even if we planted this tree exclusively for this purpose, it exists not for us but for itself, carrying out its ascribed biological function) whereas the virtual tree is created only to demonstrate the image. It has no purpose or capability beyond that which the computer program and its electronic and physical parameters give it.

However, the fact is that both trees may in principle be identical from the viewpoint of our sense organs. Although technology is not yet developed to the point that our sense organs fail to distinguish between real and virtual trees, it can be assumed that at some time we will not be able to find any differences. Virtual reality is capable of acting on all our sense organs and eventually, virtual reality will be able to simulate the material world to the same level of certainty with which we observe it. This is especially true if it is possible to meddle with the generation of nerve impulses in the human nervous system instead of the wires, sensors, and other bulky accessories of today's virtual reality. The perception of a reality *even more real* than reality itself can be achieved. Human sense organs have definite

limitations. For example, our visual acuity is several times less than that of eagles. The sense of smell in dogs is hundreds of times more sensitive than in man. Imagine that information is sent to the visual nerve of man, or if the nerve synapses of man are incapable of this, the same picture could be created in the part of the brain cortex responsible for such images.

Even today, despite the imperfections of modern computers, people spend more and more time in front of computer screens and televisions. Everything from work to entertainment is carried out in front of the screen. Some days, an individual is completely immersed in the virtual space of electronic mail, Internet sites, and television programs. The rest of the time, often spent dreaming, cannot be considered meeting physical reality because dreams are also a virtual space, the only difference being that the subconscious is prevalent.

Man's conservativeness must be kept in mind at every step. Certain, more rational, things are already available, but man will refuse them because tastes and morals are transferred from generation to generation. It seems unlikely that humanity will undergo drastic changes in its principal customs.

Significant innovations are introduced from generation to generation. That which is nostalgic for our generation may be completely devoid of meaning for our children and grandchildren. Even now, the bulky volumes of our libraries seem awkward to many youths. Why is a book of several hundred pages needed if the required word combination can be found by a simple click of the mouse in an electronic text?

Philosophical activity can outline the basic tendencies of future development. Even keeping in mind the unpredictability of many phenomena and discoveries, mankind's progress toward making his habitat a virtual space is consistent with the course of human history.

The habitat does not have to be turned into a virtual space by using computers. The use of finishing panels on concrete façades or plywood buildings instead of rock and brick is also a step toward making our world a virtual one. Builders rationalized that new materials could be used where the conservatism of human tastes made the architects compromise and propose an exterior similar to past buildings.

The use of special types of resin instead of marble to make sculptures is another example of how our habitat has become a virtual one. The ancient Latin saying *Esse quam videri*, "to be rather than to pretend to be," is no longer apropos. Things today seem certain, but they are in fact something completely different. The only question that remains is what does "in fact" mean? Does there exist some final real reality that would be impossible to doubt? This question, which is as ancient as the world, cannot be resolved using anthropocentric arguments. All things examined and studied in philosophical or humanitarian sciences belong wholly to the realm of human experience. Perceptive human experience can only be individual because no form of human experience can exist that is not directly linked to the activity of an actual human mind and physical substrate. Neither the mental experience of animals nor the simulation of experience from computer technology can be viewed, independent of human activity, as

thought or meaning, reality or imagination. The various facts of reality that sense organs can perceive, and about which something can be known or said, are only a component of human experience. Thus, experience is a method for not only assimilating and contemplating reality, but also for describing and qualifying it.

Man also recognizes reality individually. Sartre, in his work *The Imaginary: A Phenomenological Psychology of the Imagination*,[10] attempted to understand the fundamental difference between the observed image of a chair in the middle of a room and the image of a chair stored in our memory. Memorizing and recalling through recognition are two sides of experience. Simple reflection without recognition is also known in the inanimate world, since the surface of a mirror or water can reflect objects, but not recognize them.

Human activity is intentional, aimed at satisfying the needs of both sides of experience and coordinating their functioning. Each element of experience has one type of value or another. It arises, exists, and functions only because it is necessary and useful for the activity of an individual. The significance or value of experience is not beyond the limits of experience, but results from the vital need to coordinate personal experience with the material or social world—in other words, with the surrounding things and living beings.

[10] Sartre, Jean-Paul. *L'Imaginaire / Psychologie Phenomenologique de l'Imagination*. French & European Publications Inc (December 1986)

Transcendental, or more precisely, transcendent,[11] knowledge beyond the bounds of sensory experience, but not beyond the bounds of experience in general, must also be remembered. It is very important to note that transcendental knowledge is the understanding of the conditions of possible experience and not the knowledge of an objective truth independent of experience.

Neither of the sides of experience gives knowledge of the world of "things-in-themselves."[12] However, the definition itself of "things-in-themselves" given by Kant can be tricky if it is not focused on human experience. Knowledge should in one way or another be coordinated with other knowledge within the bounds of experience of material or social activity—i.e., be coordinated with facts of sensory experience and with a transcendental picture of the world.

Not one of the methods of knowledge or forms of experience (reflection, sensing, emotions, intuition, or

[11] Transcendental and transcendent are philosophical terms introduced into the latest philosophy by Kant. The former means determining a priori the conditions of possible experience. In this sense, the expression "transcendental philosophy" is almost equivalent to the modern term Erkenntnisstheorie (theory of knowledge, science of general and necessary conditions of possible experience). The latter means overstepping the bounds of possible experience (in contrast with the word "imminent"). Therefore, metaphysics, i.e., the philosophical area that pretends to know that which lies beyond the bounds of possible experience, is of no consequence to transcendent philosophy. Kant accentuates the differences between these two terms but uses them himself carelessly. Both terms were also used before Kant in scholastic philosophy. They speak in the XIIIth century about *actio immanens* (*permanens*) as an action occurring within a subject, *actio transiens* as an action passing its boundaries, *causa immanens* as the reason included in the acting object, and *causa transiens* as the reason lying outside it. We find the same use of words in Spinosa, when he speaks of God as the immanent and not transcendent reason of all things, "*Omnium rerum causa immanens non vero transiens*." (See *Encyclopedic Dictionary*, Brockhouse and Efron, Terra, 2001)

[12]By Kant's view, humans can make sense out of phenomena in various ways, but can never directly know the noumena, the "things-in-themselves."

will) in and of itself can guarantee that human activity will be successful. Each of these forms of experience can and should be used to one degree or another and in some combinations or others regardless of the circumstances of the situation and the goals of activity. Knowledge can be either a deductive hypothesis or a conviction (imperative, model). Speculative knowledge of pure reason within the limits of an actual research method is necessary and obligatory because it relates not to the objects of the world of phenomena, but to the methodological bases, making an ordering of the experience possible. Kant's conclusions and positions relating to transcendental philosophy and transcendental logic cannot be stretched beyond the limits of the methodology. Kant tells, in his prolegomenons, of a practical (and not transcendental) knowledge. He applies the term "rational faith."[13]

However, it should be recognized that practical knowledge is purely hypothetical. Even without going beyond the bounds of the ordinary laws of physics, an individual can be placed in a foreign environment, completely created for him, about which he will make false conclusions and generalizations, being directed by the results of his practical experience. Most likely, that which we observe during the history of science will seem like errors to our descendents.

The idea that should result from a thorough study of these questions is that there is no difference, in principle, between virtual reality and the material world. Furthermore, we are observing only the beginning—

[13] Kant, Immanuel, *Works*: in 6 vols., 1965. Vol. 4. Part I. pp. 67-209 (Ser. "Philosophical Heritage").

literally, the genesis—of mankind's virtual world. What philosophical questions will be raised in the future if our imagination becomes virtual? It can dominate reality and take its place, elbowing out of man's life that which today is called the "material world."

CHAPTER 6. THE DESEXUALIZATION OF PERSONALITY

The emergence of virtual personalities created by computer programs poses a question about sexual motivation. Surely, a program creating a virtual personality can force the virtual personality to associate with one of the sexes and exhibit externally sexual motivation. Such a situation can be temporary because the more independence virtual personalities acquire the less significance the opinion of a real person about them will have. By conversing with each other, making business contacts, and exchanging improvements in their software, virtual personalities free themselves of the need to create the illusion of a resemblance to people. It is possible that under certain conditions, people will prefer not to associate their virtual doubles with one sex or the other, in order to even the odds with virtual personalities generated by computer programs. Even now, people often present themselves in virtual space as someone other than who they really are.

The thought that sexual motivation is the driving force behind human progress is rather widely held. This approach is powerful because sexual behavior is the basis for human social behavior if it is kept in mind that the main goal of sexual behavior from a biological viewpoint is the survival of the species. This goal takes the spotlight when talking about biological evolution.

Sexual motivation and human sexual behavior are closely related to reproductive functions. However, unlike in animal behavior, they are determined by the social development of an actual personality. This produces a separation of sexual behavior from the reproductive function, which increases the variety of human sexual behavior.

In order to explain sexual motivation in human society, the nature of the sex drive should be examined in more detail. The sex drive is a form of subjective human survival, a reflection of sexual need. The sex drive is the beginning stage of the recognition of sexual needs. When these are recognized, the sex drive changes to another manifestation of the need—sexual motivation, the physiological mechanism of activating traces (engrams) of information stored in the memory about external objects that can satisfy the sexual need of the organism and information about those actions that can lead to its satisfaction.

Human sexual behavior is defined primarily by what need it satisfies. There are several basic forms of human sexual behavior depending on age and the final goal: the release of sexual stress; propagation, for which erotic images play an insignificant role; sensual gratification, for which the eroticism of the situation is most important; sexual behavior as a conscious or subconscious means of reaching asexual profits (for example, a marriage for money); as means for maintaining the spousal ritual; and communicative sexuality, for which sexual behavior is a form of companionship. For adolescents, another two forms of sexual behavior are the satisfaction of sexual curiosity and expressing sexual self-confidence. The variety of

motivational forms of sexual behavior makes it difficult to investigate the sexual behavior of a particular personality. Moreover, not one of these factors may be sufficient by itself when the personality is transferred to virtual space.

Sexual behavior depends on an individual's level of sex hormones, some means of reducing the libido (for example, certain antidepressants), and on society's standards, which create a feeling of embarrassment and guilt. Thus, moral standards in a society both limit external manifestations of sexuality and intensify the internal mechanisms of surviving one act or another.

Freud proposed the term "libido" for the primal human energy impulse, the vital (life) force and energy. The libido determines the evolution of a personality from birth to death. Hidden transformations of the libido also explain individual idiosyncrasies and tendencies, sympathies and antipathies, secret wishes, fears, and other features of the personality. Sexual motivation is largely determined by these features and the expression of the inner sexual stress that requires release. However, it must be remembered that, according to Freud, an unconscious component of aggression is always present in sexual behavior. This is consistent with the sexual arousal that occurs in some people while watching rape scenes.

A heightened sex drive is often a symptom of a neurotic condition. A desexualization of society based not on prohibitions but on a fundamental reduction of the libido as the result of successful therapy of neurotic conditions can reduce the aggressive element. Mixing sexually partisan virtual personalities (real people) with the society of virtual personalities based on computer

programs should lead to a significant desexualization of society.

The Internet precludes the possibility of sexual or physical force, which is a positive factor. Of course, improved communication has increased the possibility of sexual crimes, but the Internet is more likely to reduce the danger of physical aggression than stimulate it because companions cannot have physical contact, which guarantees their safety.

Sexual behavior cannot be examined separately from the institution of marriage. Despite the wide discredit of the Internet as a source of matrimonial acquaintances, it is possible that in the near future, statistics will tell a different story. Already there are more chances for young people to learn about each other and converse over the Internet than during the initial phases of personal acquaintance. The Internet provides anonymity and physical protection, liberates potential partners, and facilitates the creation of serious relationships between people who in real life would not be able to meet and, if they did, might not show interest in each other.

Premature physiological sexual maturation results in the arousal of sexual interests and the desire for a sex life that is awakened much earlier than the social readiness of the person. On the other hand, society strives to delay the individual's social maturation. Investigations indicate that the modern generation starts a sex life much earlier than a marital life. This is not forbidden by society. Sexual behavior in marriage in the last decades has undergone significant changes, due primarily to a weakening of religious prohibitions and the emancipation of women. New contraceptives that

can more adequately regulate reproduction have had a large influence.

One of the goals of psychoanalysis is to explain how the accumulation of sexual energy is distributed in the individual psyche, released, and transformed into social activity. In particular, the methods of transforming sexual energy formed the basis of Freud's sublimation concept, according to which sexual energy can have two outlets—by achieving sexual satisfaction, which is the more primitive form of release, and by sublimation, a higher level where the primal energy of the libido is incorporated into other forms of activity. Such a model contains two types of development of society and civilization. The first type is observed in societies where there are no special prohibitions on sexuality. Sex is accepted as the festive side of normal existence. A person in such a society is truly happy, does not feel the oppression of social morals, and lives a carefree life. It can be supposed that this model is close to aboriginal culture. In this instance, society is doomed to stagnation because energy is expended only on life with nothing left for sublimation. There are no forces in society for science, business, and art.

The second type is total opposition. An individual that suppresses his sexuality and regulates his behavior is unhappy, depressed, and limited in desires. The society is dynamic and has great potential to develop because the individual's unrealized impulses are sublimated to socially acceptable forms of activity. It should be noted that this sexuality model, despite not having been verified, has been recognized in other fields of human knowledge (culturology, anthropology, sociology, etc.).

The socialization of human sexual needs is one of the least studied fields of sexology. The way J. Schmidt interprets it is that a person is born with a certain level of neurophysiologic capability, able to experience sexual satisfaction by stimulating the genital and extra genital erogenous zones, reaching a climax as an orgasm. Stimulation and orgasm, according to the education theory, act as reinforcements and strengthen the tendency to seek arousing, erotic situations. The more frequent the sexual experiences, the more they occur with satisfaction and lack of conflict, and the more tolerable they are to society, the more sexual motivation will be expressed. The drive level increases. As experience is accumulated, sexual activity is proportional to its emotional consequences for an actual personality.

The more sexual activity and gratification are associated with each other during the accumulation of human experience, sexual experimentation, sexual satisfaction, gratification, and relaxation with acceptability, safety, and value, the more evident the sex drive will be. This follows the rule for generating secondary motivation.

According to this model, the sex drive, behavior, and sexual activity depend on intertwined biological, psychological, and social (cultural) factors. The term "culture" has many meanings. Friedrich Nietzsche defined it as "a single art style in all manifestations of the life of a nation," Margaret Mead as "the unification of all forms of traditional behavior," José Ortega-y-Gasset as "a social direction that we give to the cultivation of our biological potential," and Karl Jung as "the forms of behavior typical for a group, a community

of people, a society, with material and immaterial features." Freud wrote that "the word 'culture' characterizes the whole collection of achievements and institutions removing our life from the life of primitive ancestors and serves two purposes, the protection of mankind from nature and the ordering of relations between people." A specialist on the history of esthetics, M.S. Kagan, draws attention to the fact that the term "culture" was born in Ancient Rome in opposition to the term "nature."

The concept "culture" includes characteristics of society and of the individuals forming it—the individual culture of personality. The culture of feelings and relationships and the sexual culture are significant in this area.

Sexual culture reflects the ethnic and religious features of a society and the uniqueness of the epoch. One moral standard or another is often the main criterion in attempts to define sexual standards. The relationship of various cultures and societies to individual sexuality is registered on a regressive (prohibitions and judgments)/ permissive (permissions and encouragements) scale.

The French philosopher Michel Foucault postulated that it is difficult to study the sexual culture of a society because orders and prohibitions are ambiguous and varying for different members of the society. That which is allowed for some is categorically forbidden for others. Sex, age, social position, or profession can act as differentiating factors.

J. Braud remarked that the simpler and more primitive the organization and structure of a society, the more it tolerates sexuality and vice versa. Yuri Lotman

said, “The simplest form of biological multiplication is the division of single-celled organisms. In this instance, each individual cell is fully independent and does not need another. The next stage is the division of a biological species into two sex classes, any one element of the first and any one element of the second class of which is necessary and sufficient to continue the species. The emergence of zoosemiotic[14] systems forces individual differences between specimens to be viewed as significant and introduces an element of selection into marital relations of higher animals. Culture arises as a system of additional prohibitions superimposed on physically possible actions. The combination of complex systems of marital prohibitions and their structurally meaningful violations convert the addressee and addresser of marital communication into a personality. The “man and woman” given by Nature are changed to “only him and only her” by Culture. Just the incorporation of separate human units into the complicated structure of Culture makes them simultaneously parts of the whole and irreproducible individuals, the difference between which is the carrier of certain social values.”

Virtual reality is a medium in which business and creative relationships can be effectively desexualized—i.e., deprived of the unavoidable irrational sexual motivation. On the other hand, people seeking serious relationships can use the Internet as a means for meeting people.

[14] Zoosemiotics is a discipline dealing with the communicational behaviour

CHAPTER 7. PRISONERS OF THE BODY

Man, when he is healthy and well, completely forgets about the existence of his own body. Pains and other discomfort, such as cold, heat, and hunger, do not bother him. However, unsatisfied wishes and inconveniences can make one feel that life is, in fact, reality. The joke about waking up in the morning with nothing hurting meaning you've died is popular for a reason.

It is not surprising that problems of the flesh take up a large part of our existence. One way or another, as time passes, a man gives them less attention because the progress of civilization has freed him from the need to fight hunger, cold, and heat, and has relieved or greatly mollified the symptoms of many ills with the help of effective medicines. In days of old, fevers lasted longer and a simple cold could send a man to the grave.

It can be said that the dependence of the individual on the physical component decreases significantly as society develops. Corporal punishment is being eliminated everywhere. In one of the Middle East countries at the start of the 1990s, an American citizen was sentenced to caning for vandalism, but President Bill Clinton came to his aid, although unsuccessfully. The number of countries in which the death penalty is banned is growing.

Not everything is so clear in the modern world. Periodic outbreaks of mass violence often strike. However, this still does not change the basic tendency to reduce the dependence on the physical body.

With the Internet's emergence, there has been a reduction in direct physical influence on companions. Virtual personalities have no bodies, and their owners are out of range. Virtual violence—for example, the threat of a computer virus—or simple indifference can be used as penalties. These are serious threats to virtual personalities, but these threats cannot be compared to physical destruction.

It can be assumed that the tendency to alleviate the dependency of humans on their physical bodies will continue. Until recently, organ transplants were considered fantasy.[15] However, heart transplants are now almost routine. Patients can live for years after this surgery, as long as the immune system doesn't reject the transplanted organ. Transplantation of an artificial heart or the heart of animals is not as successful as the transplantation of a human heart, so operations are limited to the availability of suitable donors.

Despite the fact that modern medicine has not yet managed to find a cure for the leading causes of death in developed countries (cardiovascular disease and cancer), medicine's successes in the fight against infectious diseases gives hope that in the future, length and quality of life will increase steadily, but perhaps there is a genetically regulated limit to human life. Research on the mechanisms of ageing, gene engineering, and nanotechnology[16] takes those

[15] The first successful transplant operation was performed in 1954. It was kidney transplantation.

[16] The use of nanotechnology in medicine: Nanostructures that stimulate the rapid regeneration of organs and tissues are formed in an organism after a special injection. This is already no longer a fantasy. Diseases waiting to be cured are Parkinson's, Alzheimer's, and post-infarct regeneration of myocardium. Samuel Stepp, director of the Institute of Medical Bionanotechnology, recently emphasized that the current development of

directions that will be able to reduce even more the dependency of man on his body, prolonging human life indefinitely. Although the aforementioned procedures are accepted by society, cloning and stem cell use are still being discussed.[17]

Effective technologies for creating biotechnical human organisms with a long-term survivability do not yet exist. However, research in this area is being conducted. Plans are being made to find methods to record the brain on electronic or other media and free man from his temporal body.

It must be remembered that published results are only a small sampling of the research that various secret agencies may in fact be conducting because such developments have strategic value. Why attempt to correct thousands of biological mechanisms (processes not created by us and which we will probably never be able to fully understand) when it is possible to discard the biological body and transfer human consciousness into a virtual world that we create and understand completely, where we are more prepared to solve problems and have complete control?

Today, such suggestions elicit only the irritated smiles of skeptics. However, if the improbable changes with which humanity was pacified in the last few centuries are kept in mind that which is entirely

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nanotechnology enables the treatment of various types of disease by activating several processes of the human organism and restoring damaged organs and tissues.

[17] Stem cells form a hierarchy of immature cells of living organisms, each capable of being differentiated (specialized). The variable profile of stem cells makes them an ideal material for transplantation methods of cell and gene therapy together with regional stem cells that migrate to a site of damaged tissue of the corresponding organ and divide and differentiate, forming at this site new tissue (*Korochkin L. I.* "Biotechnology: What are stem cells" Nature (London). 2005. No. 6).

unacceptable now from a community viewpoint may gradually become a valid option for solving the problem of the dependence of man on his own body. This problem is not new. Many inspired teachings consider the release from carnal bondage a positive effect. Because we do not observe significant progress in the study of other worlds, it can be assumed that the practice of transferring human consciousness to another physical base is completely acceptable. If the tendency to develop a virtual world remains, and this leads to people's immersion into the world of virtual reality, the presence of a body will become a vulnerable link.